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Address

MODERN PROBLEMS OF METABOLISM.*

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Your president has conferred on me a great honor in asking me to deliver one of the opening lectures of the new Harvey Medical Society of this city.

It is your aim that from this well-established center waves of scientific stimulation for research work may arise and reach not only the circles of the professional workers of this city, but even those of the whole country. At this moment, when a society, promoted under such favorable auspices, opens its career by a course of lectures, I think it is opportune, not only to recount the results of investigations already completed, but principally to consider those problems which still await solution.

I am perfectly aware that in doing so I must renounce giving to my hearers the harmonious impression, which a well-worked scheme calls forth; for I am to touch manifold subjects and points of view which stand wide apart and in no organic relation to each other.

Even in confining myself to a very small sphere of the problems of metabolism, a complete and exhaustive representation of such will be impossible. Only a small selection can be made, and even this will savor of arbitrariness.

I may touch, perhaps, on several subjects which to you appear quite unimportant, and, on the other hand, I may omit many points which are of recognized importance. I expressly remark, therefore, that I shall mostly confine myself to questions which enter into my own program for future investigations on the problems of metabolism. If, as a result of my communications, you gain the impression that details of the problems are thrown together by arbitrariness or by chance of selection, I hope that, on the other hand, the personal factor will be the joining link for compensating such disadvantages.

A short retrospect of the history of several problems of metabolism may form a useful preface. All the first investigations, decades ago, were directed toward the recognition of the quality of the chemical changes in the body. The substances, which resulted from the breaking up of the tissues of the body and of the ingested food, were the earliest to be demonstrated. The end-products of animal metabolism were determined. The most important rules were discovered, concerning the production of CO_2, urea, uric acid, kreatinin, indican and hippuric acid, etc. Among the normal end-products, many substances were found which appeared only under certain conditions, and were regarded as characteristic for particular diseases. As examples of such substances I may mention sugar, the various types of albumins, peptone, leucin, tyrosin, lactic acid, cystin, etc. Following this period, in which the names of Wöhler and von Liebig stand out prominently, came the second era, viz., that of pointing out the quantitative changes of metabolism. First introduced by Bischoff, the work in this branch of investigation was carried on and thoroughly established by Carl von Voit and von Pettenkofer and their pupils. Originally confined to the physiologic circumstances in animals and men, this "quantitative study of metabolism" has since obtained new triumphs in its application to clinical medicine and to the study of pathologic processes. It is scarcely twenty years since these investigations commenced, and already, both in the physiologic and in the clinical laboratory, these quantitative estimations are being placed in the background, while attention is being directed to the newer field of the intermediary processes of metabolism. The finest and best work of late years relates to these questions. Hence to-day the investigations on metabolism approach again in character to those of the first period; but what then appeared impossible is now being attacked from all sides. Then one had to be satisfied with a knowledge of the end-products only; to-day one endeavors, through the prominent discoveries in chemistry, to make clear the intermediate stages, through which the metabolites pass to their final conditions. An infinite number of new questions is thus presented by the recent advance in physiologic and pathologic chemistry.

A number of important questions, which are of interest to the physiologist and pathologist alike, however, were left unsolved during the earlier periods of quantitative estimations, and it is only now that—thanks to the better technic of recent times—exact measuring methods are available for their investigation.

First of all, there is the question of the metabolism of energy. Since the time of Voit and Rubner it has been customary to express and to measure body "energy" in terms of calories. In part through the relation of the body weight to the necessary intake of food, and in part from the amount of oxygen consumed and of CO_2 expired, certain average figures have been determined. When an adult man is in a condition of complete muscular rest, from 22 to 24 calories per kilo of body weight are necessary during each twenty-four hours; with usual light work, from 32 to 36 calories are required. The daily food must have these calorific values if the weight of the body shall neither increase nor diminish. With the increase of muscular work, the amount of energy consumed increases in certain proportions, and these latter have been sufficiently ascertained. We know also that children require a relatively high, and old people a relatively low, exchange of energy.

Still, all these are only average numbers and they

* Lecture read before the Harvey Medical Society, New York, October 14, 1905, in the Academy of Medicine.

require the further support of numerous careful and exact observations. Even the most trustworthy figures, obtained by the use of methods, of whose accuracy there is not the slightest shadow of doubt, showed that under exactly the same conditions a difference of from 20 to 25 per cent. arose between single individuals; this can only depend on the so-called individual factors. In future, however, this difference may not be slurred over by the use of the mystic word "individuality"; we must endeavor to make clear the reasons for the rise above the average in oxidative processes in one person, and the fall below the average in another. Such information would provide us with a clear—I might even say a mathematical—insight into the condition which we now designate by the term "individuality."

An important by-question which arises in regard to the physiology of nutrition, is the problem of the influence exerted on the consumption of energy by the respective constituents of the food.

Certain experiments which Max Rubner and Ed. Pflueger have carried out on animals, tend to show that when the food contains an excessive quantity of proteids the energy-exchange rises considerably above the average. The energy production appeared to rise higher than was necessary for the muscular work done and for the maintenance of the body warmth. These results remind one of the old theory known by the name of "Luxus-consumption," if even it does not entirely compass it. They are too few and insufficient to revive the old hypothesis, which we have long known to be erroneous. As, however, one of the bases of the new science of nutrition is touched by it, the point should be thoroughly cleared up by new and better experiments on human subjects. If the excess of proteid intake really exerts a marked influence on the oxidative processes of the human organism, then we must change many of our views and explain differently a number of former experiments in metabolism. Up to now we trust that not the kind and the amount of food but only the internal and external bodily work rules the extent of the oxidation. The question is not a theoretical one only. Recently manifold endeavors have been made to shake the old standard numbers for the albumin intake of healthy men settled by the school of Voit for these endeavors, which originated from the supporters of vegetarianism, it would be water on their mill if it were proved, that large amounts of albumin raised the consumption of energy to an unseemly, that is to say, to an unnecessary and prodigal, extent. The theory of vegetarianism would also receive a specially strong support were it possible to confirm the oftspoken assertion that the prodigal expenditure of energy only follows an excessive intake of animal albumins and does not result from a similar quantity of vegetable albumins. A few experiments we made lately turned against the theories of Rubner and Pflueger.

Of greatest interest and importance are, of course, those alterations of the exchanges of energy which occur in various diseased conditions. Single and occasional former investigations excluded, we first commenced only about ten or fifteen years ago to busy ourselves with these matters. One single important fact is thoroughly established, viz.: The increase of the energy exchange which follows the administration of thyroid gland substance. This observation, which was made in my clinic by my former assistant, Prof. A. Magnus-Levy was suggested by the practical experiences of Yorke-Davies and Leichtenstern on the influence of thyroid gland tablets on obesity. Later, Magnus-Levy discovered a similar increase in the transformation of energy in exophthalmic goiter and a decrease in myxedema. But these are the only diseases in which, up to now, spontaneous changes in the output of energy are known to occur. Thus the studies—I might call them preliminary—which have hitherto been made on the extent of the processes of oxidation and the amount of nutriment necessary in diseased conditions, afford sufficient reason for the use of our improved methods in further investigations in this field. Many of these problems are of great practical importance for bedside treatment. Next, there is the old question of how great the metabolism energy is in people who are run down by chronic disease or by insufficient nourishment. Do these persons require the same amount of food as do healthy individuals, reckoned per kilo of body weight, or do their bodies diminish the extent of exchange on some self-regulated plan? It is certain that the albumin metabolism is diminished. It has even been asserted that the total production of energy also is diminished, but on this we are as yet without definite proof. My preliminary observations point to the contrary, but the question has not yet been investigated with scientific exactitude. The extremely painstaking and brilliant work of Neumann in Kiel, and of Chittenden in America, which has demonstrated the surprising extent to which the food of an adult man may be diminished without affecting the capacity for work and without altering the nitrogenous equilibrium of the body, leaves untouched this particular question.

Obesity is quite the contrary. For a very long time it has been asserted that there are two forms of obesity. One type is said to result from an excessive intake of food or from insufficient muscular exercise; the other is said to arise from an endogenous retardation of metabolic exchanges. The question is of great theoretical interest, but, as every one must admit, it is also of marked practical therapeutic importance. Since I first approached the matter, some twelve years ago, by investigations on the respiratory exchanges, the question has been constantly discussed. Some differences exist between the results of clinical observation and of laboratory experiments. Clinical reports indicate the occurrence of cases in which the obesity is due only to abnormal lowering of the oxidation, that is, to a diseased state of the protoplasm. Scientifically exact experiments, however, have failed to discover such relations. The results of some work done in the clinic at Basel seemed to point to abnormal low oxidative changes during muscular work and during the digestive processes of obese persons, but they must be discounted by the fact that the methods of estimation employed were not free from objections; correct deductions from them are therefore impossible. I am convinced, however, that with the advent of more satisfactory methods the views of the practitioners will be confirmed by laboratory experiments.

Since the earliest days of investigations on metabolism, the question as to the energy exchanges in fever has received attention. That the albumin exchanges are increased is quite certain; toxic influences are the reason. But why does the patient waste during the periods of fever? Why does he also lose so much of his body fat? As a matter of fact, in every case of long-continued fever, we observe an enormous loss of weight, even if we endeavor to avoid this loss by the administration of rich and nutritious foods. Does the cause lie in the fact that in spite of all our care an individual can not ingest the normal average calories

of the food, since the digestive organs during fever are unable to take in or to digest the necessary amount? Or do the oxidative processes in the fever periods rise markedly above the normal? If this is the case, the food requirements of the fever patient will not be satisfied by ordinary quantities; the amount of food sufficient for a healthy individual would not prevent the patient wasting during the stages of fever. The practitioner of earlier times did not doubt that fever was always accompanied by a substantial increase in all the processes of oxidation. The exact investigations on metabolic changes which have been made during the last decades do not, however, confirm these ideas. These consist, in particular, of the works of Senator and some investigations by F. Kraus and by the pupils of Zuntz. If we thoroughly and critically read through these works, we find that they are full of contradictions and by no means permit of any final conclusions being made. The technic of to-day promises, however, a satisfactory and objection-free solution of this old problem. Still, the working out of the matter is naturally dependent on clinical material, and, unfortunately, the majority of hospitals to-day are not equipped with the necessary apparatus.

Among other diseases, in which the energy exchanges should be further investigated, I may mention diabetes mellitus. In slight cases, the relations are simple and undisputed. Such cases do not exert any influence on the energy exchanges.. For a long time, however, it has been supposed—and lately the assertion has been revived on many sides—that in severe cases of diabetes the production of energy, and consequently the food requirements, are distinctly diminished. It has been calculated that in these patients the daily energy needs are satisfied with from 18 to 20 calories per kilo of body weight, while the healthy person requires from 34 to 36 calories under parallel conditions. The question is of great practical importance, because a clear conception would be of real assistance to us in the difficult dietetic treatment of diabetes mellitus. I do not allow the just-mentioned figures, concerning the diminished production of energy in severe cases of diabetes, to be quite correct; and I am of the opinion that the few previous exact observations on the production of CO_2 and the consumption of oxygen, are quite sufficient to prove this. Anyone who possesses a large respiratory apparatus, can definitely settle the entire question in a few days.

We leave now those questions which are intimately connected with the transformation of energy, and turn to another very interesting and important problem, relating to the metabolism of albumin. Earlier experiments on animals and recent investigations on human subjects have taught us that an excessive amount of food compels a retention of nitrogenous substances in the body. The usual nitrogenous equilibrium is disturbed; a smaller quantity of nitrogen appears in the excreta than was present in the food. This retention of nitrogen may be attained by the administration of large amounts of albumin, but much more thoroughly and surely by a simultaneous excess of fat or especially of carbohydrates. The albumin-sparing properties of the two latter substances, of course, are well known. The ultimate effect of such overnutrition is always an increase in the total quantity of fat. We apply this knowledge therapeutically in our "feeding cure," etc. But regarding the nitrogen there was until a short time ago the opinion that in spite of such an excessive nutrition, the nitrogen retention was only slight in quantity and short in duration—at least so far as well-nourished adults are concerned. It was taught that the body always endeavors to maintain a nitrogenous equilibrium so that, in the case of over nutrition while the excess storing of fat may continue for a long time, a similar storing of proteids is soon stopped. In certain cases, however, the storing of body proteids seemed to be both extensive and long continued, as for instance, during the period of body growth, or after chronic exhaustive diseases, or after periods of lowered nutrition—it is always during the new growth of tissues. The occurrence of considerable nitrogen retention has recently been noted, apart from the conditions just mentioned. In a case of my own, I found that in two months not less than 370 grams of nitrogen were retained. Expressed in terms of meat this is more than 11 kg. of flesh. Is this retained nitrogen really built up into pure albumins and protoplasmic substance? Our general knowledge tends to indicate otherwise. We know that excessive feeding produces obese, but never athletic, individuals. *A priori*, it is very improbable that the nitrogen retained during excessive nutrition indicates the formation of pure albumins or a new formation of tissue substance. Perhaps the nitrogen only exists in the form of nitrogen-containing fragments of the large molecules of albumin, which are held for a time and are then cast off at a later period. In favor of this supposition there is the fact, that when the period of excessive nutrition is stopped, it is usual for an enormous quantity of nitrogen to appear in the urine.

The exact form in which the nitrogen is retained within the body is still, however, entirely unknown. It is, nevertheless, an important question, because a knowledge of it would throw light on the changes which the molecules of albumin undergo in the body.

This problem leads us by easy paths to the consideration of the intermediate stages of metabolism, which is the special field of modern physiologic chemistry.

Naturally, most questions of the "intermediary" metabolism concern themselves directly or indirectly with the fate of the albumin molecules; with their disintegration as well as with their synthesis. It seems that the synthesis of albumin in the body may originate from much simpler molecules than we could conceive of until lately. By intense and long-continued tryptic digestion of albumin, the latter has been broken up until the solution no longer yields the biuret reaction. In spite of this, the administration of the products of such digestion to animals, served for the substitution of pure albumins and for the maintenance of nitrogenous equilibrium.

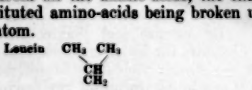
In close theoretical relation to this brilliant and important experiment of Otto Loewi stand those considerations, which are bound up with the discovery of erepsin in the walls of the alimentary canal. This ferment splits up the albumoses and peptones into simpler substances and, in particular, splits off the amino-acids. Hence, it has been assumed, that this action represents the regular arrangement of processes, that the organism normally lives on the amino-acid mixtures, and that from these basal substances are formed the albumins which ultimately circulate in the blood stream. Such a sweeping conclusion, however, is a little too previous, for it has been shown recently that erepsin occurs in all the organs of the body and thus is not specific for the alimentary tract. The ferment, which *in vitro* is able to split up the albumoses when acting in the intestine may, synthetically, form albmumoses from amino-acids. Such reversibility of ferments is already known. These considerations appear to indicate, there-

fore, that the real function of the intestinal mucosa is not to break up the albumoses into amino-acids, but, on the contrary, to build up albumoses and similar substances out of the amino-acids, which pass into the intestinal wall from the lumen. The question is certainly an available one for further experimental investigations. First of all, the living and surviving intestinal mucosa must be allowed to act on a mixture of amino-acids. This experiment has not yet been made. It is one, of course, which is very important for our ideas concerning the assimilation of albuminous substances. If the investigation yielded positive results, there would be a remarkable analogy between this process and that of the synthesis of fat by the intestinal cells. Concerning the fate of fats, we know (1) that a fat-splitting ferment (lipase) is present in the intestinal wall; (2) that by the aid of this ferment there also occurs in the intestinal wall a synthesis of fat from fatty acids and glycerin; (3) that *in vitro* this synthetic process can be reproduced by the aid of lipase. For these brilliant and important investigations we are indebted to your own countryman, Dr. Loewenhardt.

These questions are of great significance in practical dietetics, since they bring into greater application the until now almost entirely neglected amino-acids. In particular, rectal feeding would receive a new impetus. Among the amino-acids there are many substances which are less irritable to the mucosa of the large intestine and are more easily absorbed than the usually prescribed albumoses and peptones. We have already commenced investigations on this point.

Associated with the amino-acids, which represent the chief nitrogen-containing group of the albumin molecules, are many other questions, only a few of which can be touched on here. The chief of my clinical laboratory, Dr. G. Embden, has lately made an investigation on the amino-acids under physiologic and pathologic conditions. What I have to say on this point is due chiefly to the important theoretical and analytical work of Dr. Embden.

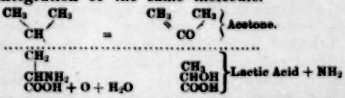
First, I have to mention that glycocol probably can be split off from all the amino-acids, the chains of the higher constituted amino-acids being broken up between α and β C-atom.



This process, it would appear, plays a great part in the organism. Recent investigations in my laboratory have shown that glycocol is normally present in all urines, and in such quantities as to approach up to 1 per cent. of the total nitrogen output. This well-grounded observation is striking, because we have for a long time known that glycocol introduced into the stomach is very easily assimilated and reappears as urea in the urine. The formation of glycocol within the body must be very large, if the kidney is able to catch and to eliminate some portion of it. This production of glycocol from the higher amino-acids may also explain how it is that the body always has glycocol at its disposal for coupling or combination purposes. I recall to mind the instances of hippuric and glycocolic acids. Further experiments must be performed, however, in order to determine whether or not the administration of large quantities of the higher amino-acids is followed by the appearance of a supernormal amount of glycocol in the urine.

If the formation of glycocol from the higher amino-acids takes place in the manner which our preliminary investigations suggest as being probable, then a new light will be shed on the question of the formation of sugar from albumins. Since it has been established that higher amino-acids, such as alanin, form a definite source for sugar (G. Embden and H. Salomon), G. Embden, working in my laboratory, has shown that after the removal of the pancreas in dogs, sugar is formed from glycocol equally as it is from alanin and other higher amino-acids. Glycocol seems to be one of the most prolific sources of sugar that we know of. This fact, taken in connection with the previously mentioned conditons of glycocol formation out of other amino-acids, explains at one stroke the question of sugar formation from albumins, and effectively removes those objections which have been heard during the most recent years.

Glycocol, however, does not seem to be the only amino-acid from which sugar can be rapidly formed. Our attention has also been directed specially to leucin, for the reason that of all the amino-acids leucin occurs most largely in the majority of the proteids of food. We are quite certain that lactic acid can be produced from alanin, and that in fact this procedure takes place within the body. A similar possibility obtains for the formation of lactic acid out of leucin. Theoretically, on the addition of water and oxidation, leucin breaks up into acetone and lactic acid, while at the same time amides are split off. Attention only just recently has been drawn to how often this process occurs in the chemistry of animal tissues and how important it is. In this case the chain of C-atoms is broken between the β and γ atom. You see, there are different possibilities of disintegration of the same molecule.



In confirmation of these theoretical possibilities, we have just proved that the "surviving" liver always excretes some acetone into perfused blood, and that the amount of acetone considerably increases when leucin is added to the inflowing blood. At the same time, as we have determined with certainty the formation of lactic acid from leucin, we are met with a new problem, associated with the as yet unknown changes during the passage of carbohydrates through the body. We certainly know the end-products of carbohydrate disintegration—carbonic acid and water—but in regard to the intermediary metabolism of carbohydrates and the manner in which those end-products are produced we are still in the realm of theories. Entirely disconnected facts are alone our guides. One of the earliest theories related to the formation of lactic acid from carbohydrates; but until now no satisfactory proof of this was given to us, at all events so far as muscular tissues are concerned. Many physiologists consider the lactic-acid formation in muscle to be due to postmortem changes. The modern technics, which have advanced perfusion methods to a remarkable extent, will make possible a definite solution of the problem; until now, it is only solved so far as the liver is concerned. In my laboratory, Embden and Almaggia have thoroughly demonstrated that lactic acid ensues in fact from disintegration of carbohydrates by the liver. This result arises from the action of a ferment and, as all our experiences with organic ferments indicate that the action of these

ferments is reversible, so this procedure may also take place in the reverse way. As a matter of fact, we know that very often the administration of lactic acid to individuals affected with severe diabetes, and more especially to dogs after removal of the pancreas, is followed by an increase in the glycosuria. We also consider lactic acid as a rich source of glycogen. These few available facts lead to the following hypothesis:

A part of the sugar which is broken up in the muscle circulates in the blood as lactic acid; the lactic acid passes to the liver and is there rebuilt up to carbohydrate and eventually reaches anew the muscles in the form of sugar. With this conception of the intermediary stages and circulation of the carbohydrates in the form of lactic acid, some well-known facts are in full agreement. After extirpation of the liver, sugar disappears from the blood stream and lactic acid makes its appearance. Another remarkable fact may also be explained on this hypothesis. When the pancreas is removed from birds, glycosuria does not result. In these animals, lactic acid is not bound to be regenerated into sugar, but with the addition of ammonia, it can form uric acid. If this view be a correct one, then the uric acid of the bird is partly a derivative of sugar. I advance this theory, of course, only in the form of an hypothesis; it has, in any case, the advantage of promoting further investigations on the intermediary stages of carbohydrate metabolism and of providing a new aim and a definite proposition for further proof.

I have already mentioned that, theoretically, acetone may be produced from leucin, and that we have been able to demonstrate this procedure by experiments on animals. This result is very remarkable, since the opinions of to-day designate the fatty acids alone, and the lower fatty acids in particular, as the source of the acetone bodies, and because until now we have always accepted the oxybutyric and diacetic acids as the necessary precedents to acetone. This latter view thus requires correction, although our experiments in no way show that in the formation of acetone leucin plays an important figure in respect to quantity. At all events, it indicates that the acetone question can not yet enter into a condition of rest. Also the problems of the formation of acetone from fat and the hindrance to the production of acetone through the simultaneous oxidation of carbohydrate, are still sufficiently enigmatical and can not be solved until we know much more about the intermediary disintegration of fats and of carbohydrates than we do up to this day.

With this I wish to conclude my survey of modern problems of metabolism. As I stated at the commencement of the lecture, it has been necessary to roam over a large amount of ground and to consider subjects that were but slightly related to each other. You will observe that to-day we are busying ourselves in a much more intimate manner with the details of metabolic processes than in not very remote periods was deemed either necessary or possible. Already the little that has been mentioned here is more than the working powers of one single man can master; but on all sides we see new young energy pouring into this interesting and important branch of medical investigation, in order to harvest this inexhaustible field. We greet them with joy and with satisfaction. The results will not be long in coming.

We are all convinced that these marked steps into the wonderland of animal metabolism will not only advance the theoretical science, but, as we have always seen, that every advance in physiologic and pathologic chemistry has been followed by improvement of our bedside treatment. The achievements of the dietetic treatment of diseases have gone hand in hand with the advances in theoretical investigations. If we compare the progress in dietetics that has been made during the last decade with the wonderful successes of the surgeon, the medical clinician no longer need feel either shame or envy. In the same period a vast amount of work has been done by the internist in regard to therapeutic matters. The close relations which have been maintained between the progress in clinical bedside treatment on the one hand and physiologic and pathologic chemistry on the other, has been very fruitful indeed, and still fruitful will remain.

Great problems still await solution and rich outside help is necessary thereto. With confident expectation, medical science looks to this country, in which in recent times numerous ardent and honest research-loving young workers have entered into the service of problems of metabolism, and in which the riches and the munificence of its inhabitants more than elsewhere have provided that external aid which has made more easy the prosecution of great and far-reaching investigations. I close with the prophetic words of our Goethe:

Amerika, Du hast es besser
Als unser Continent der Alte.

Original Articles

COCCIDIOIDAL GRANULOMA.*

W. OPHÜLS, M.D.
SAN FRANCISCO.

We have in California a peculiar form of oidiomycosis of which, so far, no cases have been described in people who had not been in our state, except the very first case of this form of infection which was observed by Wernicke[1] in Buenos Ayres and later more accurately described by Posadas. The first case in California was reported by Dr. E. Rixford[2] of San Francisco to the San Francisco Medico-Chirurgical Society, March 4, 1894. Another similar case under the care of Drs. Thorne[3] and Robinson was seen by him[4] the same year. Later Dr. Rixford,[5] in conjunction with Dr. Gilchrist of the Johns Hopkins Hospital Medical School, gave a more complete description of these two cases and of the parasite.

This description established fully the morphology of the parasite in the tissues and the nature of the lesions which it produces. At that time, however, the organism was looked on as a protozoon, on account of failure to obtain growths, and on account of a certain resemblance to the coccidia named *Coccidiodides immitis pyogenes resp.*, the idea being that on account of some morphologic differences the parasites in the two cases might not be the same. This view of the animal nature of the parasite proved to be erroneous in the course of the examination[6] of a new case of this disease which oc-

* From the Pathological Laboratory of Cooper Medical College, San Francisco.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Wernicke: Centralblatt f. Bact., 1892.
2. Occidental Medical Times, 1894, vol. viii, 326.
3. Thorne: "A Case of Protozoic Skin Disease." Occidental Medical Times, 1894, vol. viii, 703.
4. Rixford: "A Case of Protozoic Dermatitis." Occidental Medical Times, 1894, vol. viii, 704.
5. Rixford and Gilchrist: "Two Cases of Protozoan (Coccidioidal) Infection of the Skin and Other Organs," Johns Hopkins Hospital Reports, vol. i.
6. Ophüls and Moffitt: "A New Pathogenic Mould." Philadelphia Medical Journal, 1900.

curred in 1900, when it became apparent that the parasite could be cultivated and developed in the cultures in the form of a mould-like growth. It probably belongs to the oidia. I have therefore proposed the name *Oidium coccidioides*.

The lesions as well as the parasite of coccidioidal granuloma show certain resemblances to the tissue changes and organisms found in blastomycetic dermatitis as described by Gilchrist, Stokes and Gilchrist, Wells, Hessler, Hyde, Hektoen, Montgomery and others. There is this difference, however, that whereas in blastomycetic dermatitis the primary focus of infection always is the skin and the disease remains localized in that organ, with the exception of one case reported by Walker and Montgomery,[7] in which a generalization of the process took place; such generalization of the disease is the rule in coccidioidal granuloma and the primary focus of infection is just as frequently to be found in the interior of the body as in the skin. Typical cutaneous lesions are often missing entirely. The parasite in coccidioidal granuloma differs from the various fungi described in blastomycetic dermatitis first by the absence of budding during its development in the tissues, second by its multiplication by endosporulation, third by certain differences in its growth on artificial culture media. Still the resemblances between lesions and parasites in blastomycetic dermatitis and those in coccidioidal granuloma seem close enough to my idea to classify them together, perhaps after Ricketts' suggestion, as oidiomycoses. It must be acknowledged, though, that there is this difficulty in the way of accepting Ricketts' nomenclature, namely, that under the term oidiomycoses should be included all diseases produced by oidia, whereas Ricketts attempts to limit the term to what is commonly known as blastomycetic dermatitis, a few cases of more general infection with yeast fungi and infections with *Oidium coccidioides*. On the other hand, the term blastomycosis would hardly include all the fungi which cause these troubles. Many of them are very much more complicated in their modes of development than ordinary blastomyces. In this dilemma about names I believe we should look rather to the professional botanist than to the medical worker for a decision whether these organisms should be properly classified as blastomycetes or as oidia. Certain is this, that we have here a class of diseases usually with the anatomic characters of granulomata frequently localized in the skin but also occurring in other organs which is caused by a variety of lower fungi, some resembling more blastomycetes, others more oidia.

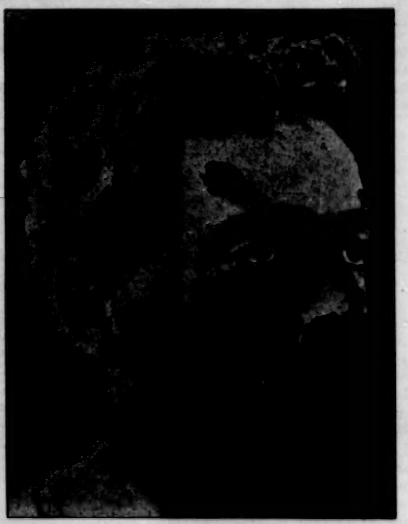


Fig. 1.—Face lesions in case of Montgomery (British Journal of Dermatology).

There are now on record 10 cases of coccidioidal granuloma, to which I can add three new cases, making 13 in all.[8] Unfortunately, the records of the three new cases are not complete.

One of these is the case of a young canner, C. M., 19 years of age, who came to the City and County Hospital at San Francisco Sept. 23, 1901. Before entering the hospital he had irregular attacks of fever with violent chills for four weeks. In the hospital he developed the symptoms of a severe, unusually chronic meningitis and died Dec. 17, 3 months after entering. The necropsy showed an old calcified caseous spot in one of the peribronchial lymph glands on the left side, one old miliary tubercle in the left kidney, a chronic irregular caseous process in both adrenals, a basilar meningitis with many tubercles in the Sylvian fissures and a very extensive chronic inflammation of the pia mater of the spinal cord which in places was 3 to 4 mm. thick and full of tubercles and submiliary abscesses. The spinal cord showed a marked softening especially in the periphery underneath the thickened pia mater. He also had a terminal bronchopneumonia and beginning cystitis and pyelitis in consequence of a paralysis of the bladder which developed toward the last and necessitated catheterization. At the time the case was regarded as an ordinary case of tuberculosis. No attempts were therefore made to obtain cultures. Several years later only, adult and sporulating forms of *Oidium coccidioides* were discovered in sections from the meninges. One of the most remarkable features of this case is that tubercle bacilli and no other parasites were found in the adrenals, whereas no tubercle bacilli, but many oidia could be demonstrated in the meninges.

The second case was one observed at the German Hospital in San Francisco in Dr. Weil's service, to whom I am much indebted for allowing me to make use of it here. The patient was an old man, born in Germany in 1842. When 16 years old he had an enlargement of the glands of the neck with extensive suppuration, which after considerable time healed with the formation of large scars. He came to America in 1874, lived in New York, San Francisco, Oakland and Sacramento. He was employed most of the time as a baker or as a mill hand. In Sacramento he was overseer of a large market. He never lived in the San Joaquin Valley. Toward the end of 1903 a large cold abscess developed on the left side of his chest which was opened in March 1904. Two ribs were resected. The wound remained open ever since. Later soft fluctuating swellings developed on both sides of his neck. In June, 1904, Dr. Weil curetted the open sinus and removed some diseased bone. Microscopic examination of the granulation tissue showed miliary and submiliary chronic abscesses, some with giant cells in their walls and in these abscesses the parasites; there were many sporulating forms. Some time afterward the patient was discharged, apparently cured.

In the third case, Chinese, W. D., at the City and County

7. "Further Report of a Previously Recorded Case of Blastomycosis of the Skin; Systemic Infection with Blastomyces, Death, Autopsy," THE JOURNAL A. M. A., 1902, vol. xxxviii, 567.

8. At the end of the paper is a short synopsis of the cases already published and a more detailed account of the new cases. The numbers in the text refer to the numbers given to the cases in that place.

Hospital, the external condyle of the right humerus was removed in June, 1905, on account of caries involving the elbow joint. Microscopic examination of the specimen showed fibrous thickening and cellular infiltration of the periosteum and the adjoining muscle. There was extensive destruction of the bone with formation of tubercle-like nodules with large giant cells of the Langhans' type. In other places there were submiliary chronic abscesses. One section shows a large area of diffuse caseation. In the latter were many large full grown parasites. In one of the submiliary abscesses was a typical sporulating form. The patient died with symptoms of a chronic pulmonary trouble with sputum in which no tubercle bacilli could be found. He also had a paralysis of both legs. Unfortunately in this case also no necropsy could be made.

If we look over the cases so far reported in order to obtain a clinical and anatomic picture of the disease, we find that on account of the great variety of lesions produced by the parasite and the great variety of organs affected, it is very difficult to make any generalizations. The clinical symptoms in these cases, of course, depend entirely on the localization of the disease in the different organs of the body and the extent to which these organs have been involved in the process. So far no typical clinical picture can be given, but in some cases there is a striking resemblance to tuberculosis. In regard to the anatomic changes, one can say that the disease belongs to the infectious granulomata resembling tuberculosis, although at times differing from it in certain respects. As in all infectious granulomata the manifestations of the disease are very manifold, the most characteristic, of course, being nodules consisting of granulation-tissue at various stages of development, but in addition to such lesions and mixed with them we find suppurative processes usually of a chronic character which in exceptional instances may be quite acute, however. The infection with *Oidium coccidioides* therefore produces either submiliary, miliary or larger nodules, which resemble tubercles very closely. These nodules may caseate. Later the caseous material may liquefy and cavities containing pus-like material may be produced in this way. Or, in other cases, there may be suppuration from the beginning, sometimes of a rather acute type, but usually more chronic in character, leading to the formation of miliary or larger, sometimes very large (size of an infant's head) chronic abscesses or chronic ulcers. The lesions are nearly always progressive, with marked tendency to dissemination by the lymph and blood current, still sometimes they may heal eventually. In this tendency to rather rapid spreading in the same organ and from one organ to another, and in the more suppurative character of the lesions the disease at times resembles glanders more closely than tuberculosis, although it has been clinically most often confounded with the latter.

Six of the 12 cases which have been reported more accurately had peculiar skin lesions. The appearance of these differed considerably in the different cases. Sometimes they were composed of large tubers with more or less ulceration, recalling the clinical picture of mycosis fungoides. This was observed in Cases 1 and 4.[8] The lesions in the latter case are shown in Fig. 1. In Cases 2 and 8 the nodules in the skin were much smaller and the trouble had the appearance of a hypertrophic lupus, as shown in Fig. 2. Again in Case 3, the lesions were more ulcerative in character, there was less tumefaction at the edges of the ulcers and instead of more or less solid nodules, submilliary abscesses were largely encountered (Fig. 3). The trouble in these cases usually started in some exposed part of the skin and extended from there discontinuously more or less all over the body. In one of my cases, a Japanese, there was only one ulcer on the foot, of the appearance of a simple chronic ulcer without tumefaction, nodules or miliary abscesses at the margins. The ulcer was covered with a thick brown scab.

These cutaneous lesions seem to have been the primary seat of infection in 4 of the 6 cases. In Cases 4 and 8 this is a little doubtful, because in both of them there were symptoms of internal disease before the cutaneous manifestations developed. Case 4 apparently is an example of primary pulmonary infection, of which there are two more instances among my own cases. In Case 5 the first clinical symptom was a pleurisy on the left side, and at the necropsy the lungs were found extensively involved. In the other, Case 6, there were old scars at both apices, from which the process probably had started. Case 7 also probably has to be regarded as a primary pulmonary infection; otherwise the source of infection would be entirely obscure in this instance, in spite of careful anatomic investigation. In the other cases there was no chance for investigation sufficient to obtain any clue in regard to the mode of infection.

In the lungs a variety of conditions have been observed. In Case 6 nothing was left in the lungs except small scars at the apices, whereas in other cases the lesions were rapidly progressive and very destructive. Case 5, which is a typical example, showed irregular nodular consolidations, with extensive caseation and abscess formation, many disseminated miliary nodules and small abscesses, several large abscesses, one extending into mediastinum and another into the diaphragm. There was an empyema on the left side. The early involvement of the pleura and the extension of intrapulmonary abscesses into adjoining viscera (mediastinum, diaphragm, soft tissues of the lower neck, etc.) seem to be rather characteristic of the disease.

Fig. 3.—Face lesions from second case of Rixford and Gilchrist (Johns Hopkins Hospital Reports).

If the lungs are infected secondarily by the blood current, the result, as a rule, seems to be the formation of innumerable miliary nodules, very much like those observed in acute disseminated miliary tuberculosis. These also occur in such instances in spleen, liver and kidneys and may or may not develop in these organs into small chronic abscesses.

The lymph glands are affected early and extensively. They usually show enlargement, caseations and suppuration.

In its predilection for certain organs the disease is rather similar to tuberculosis. The adrenals are frequently diseased (mentioned in Cases 2, 7, 8). In all three cases the lesion consisted in an extensive caseation of these organs. Basilar meningitis, resembling tubercular meningitis very closely, was observed in Cases 6 and 7. In Case 6 the lesions were rather acute, like ordinary tubercular meningitis, whereas in Case 7 the process was very much more chronic, lasting for over three months.

Disease of the bones was noticed in Cases 2, 5, 10, 11, 12. The trouble was often multiple and had the appearance of a chronic suppurative periostitis and osteomyelitis, with caseation. Here, again, in some instances particularly, the resemblance to tubercular caries was quite marked.

In one case only (Case 2) the internal genitalia were affected. There was a chronic caseation and suppuration of prostate, seminal vesicles, both epididymides and testes. This observation is interesting on account of the invariably occurring chronic suppurative periorchitis in guinea-pigs after intraperitoneal injection.

The histology of the lesions is remarkable on account of the close resemblance of some of the lesions to those produced by the tubercle bacillus, showing that in tuberculosis, just as in all other diseases, the reaction of the tissues to the virus is not specific or in any way pathognomonic. In coccidiodal granuloma we also observe histologically interesting transitional stages between small chronic abscesses and tubercle-like nodules, which, however, although more rarely, may also be found in cases of tuberculosis. Figure 4 shows, in one section "typical" tubercles, with giant cells of the Langhans' type and submiliary abscesses surrounded by thick layers of epithelioid cells. In Figure 5 several of the "tubercle"-like nodules are shown with the high power. In Figure 6 we see a similar nodule with a central abscess cavity filled with polymorphonuclear leucocytes, and in Figure 7 a chronic abscess* surrounded by epithelioid cells. On one side in the layer of epithelioid cells there is a small giant cell. Figure 8 is taken from the edge of a larger tubercle and shows typical caseation.

Examples of more acute lesions are given in Figs. 9 and 10. In Fig. 9 one sees an irregular accumulation of cells, largely polymorphonuclear leucocytes, in the meninges with beginning necrosis in places, and Fig. 10 illustrates the thick wall of one of the larger chronic progressive abscesses in Case 2. There is a thick layer of granulation tissue, the superficial layers of which are necrotic. In the granulation tissue there are many parasites; around some of them small abscesses are noticeable.

The *Oidium coccidioides* occurs in the tissues in the form of spherical bodies that grow to about 30 microns in diameter, consisting of an irregularly staining protoplasmic body and a double-contoured capsule which in the larger forms is thick and often covered on the outside with prickles or even long spines (Fig. 11). Different from the parasites in blastomycetic dermatitis, these spherical forms do not multiply by budding, but by endosporulation, as shown in Fig. 12. The formation of spores is preceded by a division of the protoplasm into 2, 4, 8, 16, etc., parts. The spores may number 100 and more. They are liberated by a bursting of the capsule and grow out directly either outside or often still within the old capsules into young spherical parasites. If many sporulating forms are present, the process is usually more acute and more suppurative in character. The number of the parasites in the lesions varies a good deal. Usually they are numerous enough to be easily found, at other times several sections have to be carefully studied before they are noticed. In pus they are most easily found when a drop of fresh pus is spread between coverslip and slide and looked at with the low power.

When one of the adult parasites is placed in a suitable medium it grows out into long septate hyphæ in the manner shown in Fig. 13, iv and v, developing in course of time into a mouldlike growth (Fig. 15). It is probable that the spores also may be the starting point of such growth (Fig. 13, vi). It is not always easy to obtain the first growth, because not all parasites give rise to the formation of hyphæ, and they do so only when they are free, entirely separated from the tissues. A drop of pus is the best material for starting a culture. Solid tissue containing parasites must be carefully teased or ground in a sterilized mortar before a growth can be obtained.

The fungus grows well on all media in the incubator and more slowly at room temperature. Fig. 14, iv, shows the mycelium of a fresh culture which consists of cylindrical septate branching hyphæ. After varying intervals, sometimes a month or more, spores develop in the ends of the hyphæ (Figs. 13, i, and 14, i). These spores are of interest, because from them, after introduction into the tissues, the spherical forms develop in the manner shown in Fig. 13, vii, by direct enlargement. As long as the culture does not contain any spores it is not infectious. Spherical forms with endosporulation are never observed in ordinary cultures nor are mycelia ever found in the tissues. Wolbach, however, succeeded in developing the spherical forms with endosporulation outside the tissues in collodion sacs placed in the peritoneal cavity of animals.

The spores which form on artificial media can also be the starting point of a new growth on new media (Fig. 13, iii). The spores are first biconcave on both sides with sharp edges, later they may take all sorts of irregular forms (Fig. 14, iii). In old cultures I have found a few times yeast-like growths like the one shown in Fig. 14, ii.

Experiments have shown that dogs, rabbits and guinea-pigs are very susceptible to infection with *Oidium coccidioides*. The cutaneous lesions have been reproduced in dogs. Intraperitoneal injection is followed by chronic inflammation of the omentum with formation of nodules and abscesses, the formation of nodules on the peritoneum in liver and spleen and sometimes in pleura and lungs. In male guinea-pigs and rabbits, as has already been mentioned, a chronic suppurative periochitis develops after this form of infection.

After intravenous injection the chief lesions are encountered in the lungs in the form of innumerable miliary nodules; most other organs, however, are usually affected similarly and sometimes bone lesions occur. Fig. 16 gives an illustration of the lesions in the omentum of a guinea-pig. The microphotograph, which is taken with a very low power, shows numerous small abscesses in a mass of cicatricial tissue. In Fig. 17 a more tubercle-like lesion from the lower side of the diaphragm of an animal is represented.

So far it has not been possible to trace the source of the infection in any of the human cases. As mentioned

* Editor's Note: A chronic *miliary* abscess. The word *miliary*, under the cut, is a typographical error.

Fig. 2.—Skin lesions on face and hand of Case 2. Taken from Rixford and Gilchrist's paper in Johns Hopkins Hospital Rep., I.

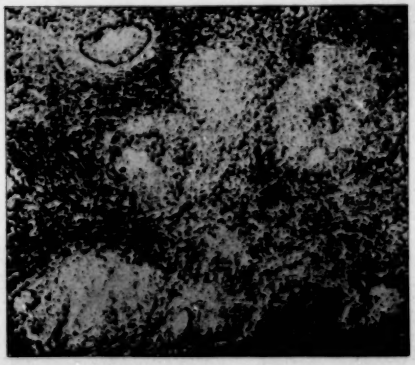


Fig. 4.—Nodules resembling tubercles and chronic miliary abscesses in pia mater of spinal cord in Case 7. Low power.

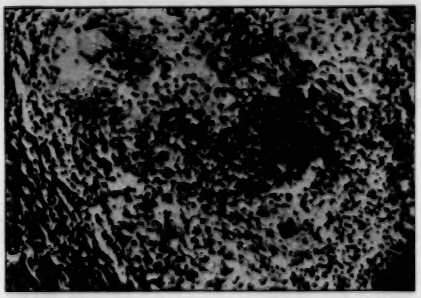


Fig. 5.—Nodules resembling tubercles. Pia mater of spinal cord, Case 7. High power.

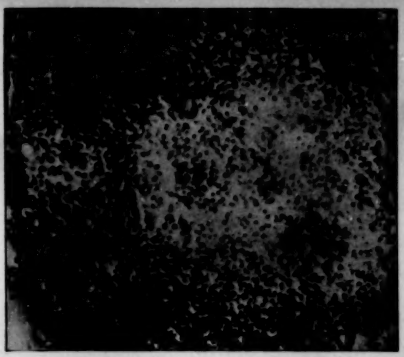


Fig. 6.—Tubercle-like nodule with small central abscess. Pia mater of spinal cord, Case 7. High power.

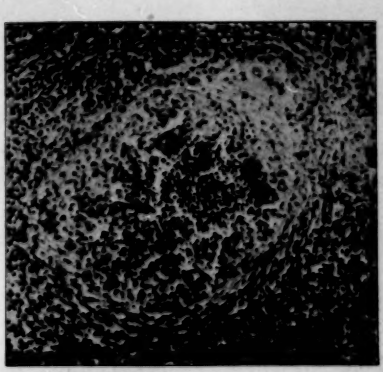


Fig. 7.—Chronic biliary abscess with giant cell in wall. Pia mater of spinal cord, Case 7. High power.

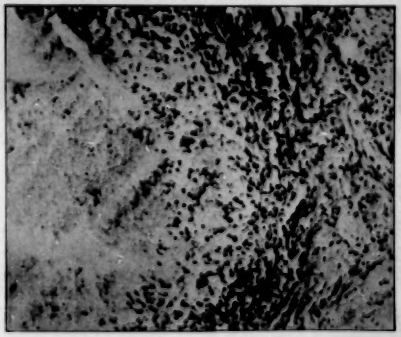


Fig. 8.—Large nodule with caseation. Pericardium, Case 6. High power.

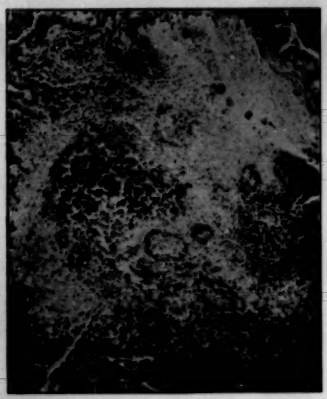


Fig. 9.—Subacute basilar meningitis with caseation in Case 6. Low power.

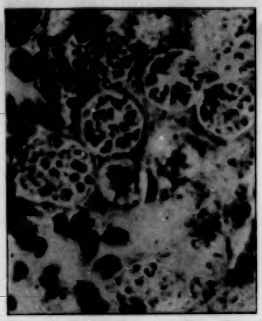


Fig. 12. Sporulating parasites, Case 5, 1/12 hom. immersion.

Fig. 13.—Development of parasite on artificial media. Taken from Ophüls paper, Jour. of Exp. Med., vi, 1905. I. Spores in ends of hyphæ. II and III. Germination of spores. IV and V. Development of hyphæ from spherical forms of parasites. VI. Development of hyphæ from spore formed by endo-sporulation in tissues. VII. Development of spherical forms in tissue from spores formed in cultures.

Fig. 14.—Development of parasite on artificial media. I. More unusual forms of sporulation. II. Yeast-like form found in old pure culture. III. Involution forms of spores. IV. Young mycelium showing septate and cylindrical hyphæ.

Fig. 15.—Photograph of culture of *Oïdium Coccidioïdes* on slanting agar-agar.

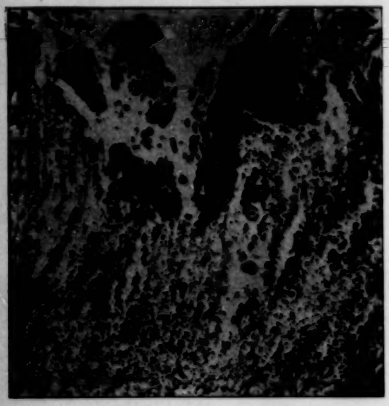


Fig. 10.—Wall of chronic abscess with many parasites. Case 5. High power.

Fig. 11.—Adult parasites, Case 5, 1/12 hom. immersion.

Fig. 17.—Nodule with many parasites on lower surface of diaphragm of guinea-pig after intraperitoneal injection. High power.

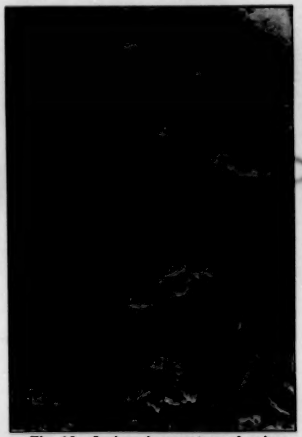


Fig. 16.—Lesions in omentum of guinea-pig after intraperitoneal injection. Low power.

before, the disease seems to be almost limited to California. Most cases have come from San Joaquin Valley, but some have been observed in people who have never been in that part of the country. There has not been an epidemic outbreak in any place as far as is known. The cases have been found at considerable intervals in San Francisco in people coming from the country and had no apparent relation to one another. Several of the patients have been working as day laborers on the railroads, but not all of them, by any means. From what we know from the cultivation experiments it would seem quite possible that the oidium occurred in nature and caused infection occasionally only. Since animals are susceptible to it, it has been suggested that the trouble might be primarily an animal disease and only occasionally transmitted to human beings, but so far it has not been possible to adduce any evidence in support of this theory. I am fairly convinced that the cases are more frequent than would appear now. The resemblance of the disease to tuberculosis is so great clinically and anatomically that the true nature of the cases is recognized only when a careful microscopic examination is made of the diseased tissues or the pus from the lesions.

SYNOPSIS OF CASES.

Case 1.—Case of Posadas and Wernicke (*Centralbl. für Bact.* 1892. *Revue de Chirurgie*, March, 1900, etc.) First symptom: appearance of bluish red tumor of size of lentil on right cheek, later large ulcerating nodules resembling mycosis fungoides appeared in various parts of the skin. Secondary involvement of regionary lymph glands. The disease lasted seven years. At autopsy disseminated nodular lesions were found in the internal organs.

Case 2.—First case of Rixford and Gilchrist (*Johns Hopkins Hospital Reports*, I). Observed 1894. Male, 40 years old. First manifestation: sores on forehead and back of neck, later, disseminated cutaneous lesions resembling hypertrophic lupus. Nine years after first symptoms involvement of regionary lymph glands, death one year later. Lesions found in internal organs at autopsy: chronic abscesses, disseminated nodules, old scars and irregular areas of consolidation in lungs; chronic nodular pleurisy, nodules in diaphragm, circumscribed chronic nodular peritonitis underneath diaphragm and in pelvis, caseation and suppuration in peribronchial and retroperitoneal lymph glands, disseminated nodules in spleen, caseation of both adrenals, caseation and suppuration of prostate, seminal vesicles, both epididymides and testes, chronic suppurative and caseous osteomyelitis of middle of left tibia and head of metacarpal bone of left index finger.

Case 3.—Second case of Rixford and Gilchrist (*Johns Hopkins Hospital Reports*, 1). Observed 1894. Male, 33 years old. First symptom: two small pimples on forehead developing into chronic ulcers, later progressive disseminated ulcerative lesions of skin, early involvement of regionary lymph glands. Night sweats, remittent fever. Duration of disease 3 months. No necropsy.

Case 4.—Case of Montgomery (*British Journal of Dermatology*, XII, 1900). Male, 21 years old. First symptoms: cough ten months before death. Two months before death appearance of large nodules resembling mycosis fungoides in skin over right eye which ulcerated, later widely disseminated cutaneous lesions. High remittent fever with night sweats. Secondary involvement of regionary lymph glands, rapid increase in pulmonary symptoms. Finding in internal organs at autopsy: large abscess in upper part of right lung extending underneath clavicle into soft tissues of neck. Several smaller abscesses and consolidated areas in right lung. Large abscess in right lobe of liver.

Case 5.—Case of Moffitt and Ophüls (*Phil. Med. Jour.*, 1900, *Jour. of Exp. Med.* 1905, VI). A. L., male, 19 years old. First symptom: chill followed by pleurisy: later multiple arthritis, osteomyelitis of frontal bone. Slight chills and profuse sweating. Duration of disease: three months. Lesions found at autopsy. Irregular nodular consolidation with caseation and abscess formation in lungs, also disseminated miliary nodules, and larger abscesses extending into mediastinum and diaphragm. Empyema on left side, caseation and suppuration of retroperitoneal lymph glands, disseminated miliary nodules in liver, disseminated nodules and abscesses in kidneys and spleen, purulent periostitis and osteomyelitis of frontal bone, both tibiae. Suppurative inflammation of both knees, right shoulder, both elbows and both wrists. Cultures obtained.

Case 6.—G. B. (*Jour. of Exp. Med.*, 1905, VI.), old man. No clinical history. Lesions found at autopsy: Old partly healed lesions at apices, chronic nodular pericarditis, disseminated nodules in spleen and kidneys, basilar nodular meningitis.

Case 7 (New case).—C. M., canner, 19 years, came to City and County Hospital, Sept, 23, 1901, had been in San Joaquin Valley for 12 days the month before, stopping at Bakersfield and Fresno. Before entering the hospital he had irregular attacks of fever with violent chills for four weeks. On entering he had high remittent fever, no plasmodia could be found, leucocytes normal, much headache, marked rigidity of neck, tenderness of cervical vertebrae, constipation. Kernig's symptom was present but not very marked. At intervals the patient was in stupor or at times delirious. December 5, unequal pupils, complete paralysis of left abducens. December 6, paralysis of bladder. December 9, bed sores. He died December 17. At autopsy an old calcified caseous spot was found in one of the peribronchial lymph glands on left side, one old miliary tubercle in the left kidney, chronic caseation in adrenals (tubercle bacilli found in sections, no oidia). Basilar meningitis with many disseminated nodules in Sylvian fissures, very chronic inflammation of pia mater of spinal cord with thickening to 3-4 mm. in diameter. In thickened pia many miliary nodules and abscesses. Marked softening of cord. Terminal bronchopneumonia and beginning cystitis and pyelitis. The case was first regarded as an infection with tubercle bacilli. Later adult and sporulating forms were found in the meninges, no tubercle bacilli could be demonstrated in them.

Case 8.—Case of Montgomery, Ryfkogel and Morrow (*Jour. of Cut. Dis.*, Jan., 1905). Findings at autopsy: Disseminated cutaneous lesions resembling hypertrophic lupus. No old lesions in lungs but many disseminated miliary nodules which were also present in spleen, liver and kidneys. Chronic caseation of adrenals. Cultures obtained.

Case 9.—Japanese (*Jour. of Exp. Med.*, VI., 1905). Chronic simple ulcer of foot, caseation and suppuration of inguinal lymph glands and one of cervical lymph glands. This patient was later treated at the City and County Hospital in Dr. Huntington's service for a large abscess of the anterior abdominal wall which extended into the pelvis. The abscess was opened and drained. The patient discharged improved. It has been impossible to trace him since he left the hospital.

Case 10.—Case of Gardner and Halton. An unusual infection in the bones of the foot. San Francisco County Medical Society, November, 1904. *Cal. State Journal*, 1904. Old man who worked on the railroad in the San Joaquin Valley. In 1900 he had an accident to right foot, followed by an abscess on the dorsum of foot. The abscess was opened and healed. Foot remained swollen and tender. In 1904 abscess formed over fourth metatarsal bone. It was freely opened and considerable necrotic bone and pale granulation removed. Curettings show caseation and formation of tubercle-like nodules. Many adult and some sporulating parasites. Amputation of foot. The patient is otherwise apparently in perfect health. Cultures obtained.

Case 11 (New case).—D., patient at German Hospital, service of Dr. Weil. Male, German, born 1842. When 16 years old, while still in Germany he had an enlargement of the glands of neck with suppuration which after considerable time healed with formation of large scars. He came to America in 1874, lived in New York until 1877, then came to San Francisco, where he stayed until 1880. Then he moved to Oakland remaining there until 1897, when he moved to Sacramento. He has never lived in the San Joaquin Valley. He worked as baker, millhand and in Sacramento as overseer of large market, where he had to handle poultry, rabbits, etc.

Does not remember having seen many diseased animals. Toward the end of 1903 a large cold abscess developed on left side of his chest which was opened in March, 1904. Two ribs were resected. The wound remained open ever since. Large soft fluctuating swellings developed on both sides of his neck. Dr. Weil curetted the open sinus and removed some diseased bone. Microscopic examination of the granulation tissue showed miliary and submiliary chronic abscesses, some with giant cells in their wall. In these abscesses the parasites were found. Many sporulating forms., Cultures obtained.

CASE 12 (New case).—Chinese patient, of City and County Hospital, June, 1905. The external condyle of the right humerus was resected for caries which involved the joint. Microscopic examination of the specimen showed fibrous thickening and cellular infiltration of the periosteum and adjoining muscle; extensive destruction of bone with formation of granulation tissue full of tubercle-like nodules with large giant cells of Langhans' type. In other places there were submiliary abscesses. One section showed a large area of diffuse caseation. In the latter many large adult parasites and some empty shells. In one of abscesses a typical sporulating form. The patient suffered from a chronic pulmonary trouble with much purulent expectoration, no tubercle bacilli could be found. There was also a paraplegia of both legs. The patient spoke Chinese only, so no history could be obtained. He died within a short time, but unfortunately no autopsy was obtained.

CASE 13.—Parasites described by Wolbach, *Journal of Medical Research*, XIII., 1904.

DISCUSSION.

DR. H. A. L. RYFKOGEL, San Francisco, said that Dr. Ophüls has seen 12 cases in such a short time because he was looking for them. It may be demonstrated later that in California and in certain other parts of the universe the disease is fairly prevalent. Dr. Ryfkogel mentioned a case in which he was able to make the bacteriologic diagnosis. The clinical diagnosis had been made previously by Dr. Montgomery. For a number of years the case had been diagnosed as one of tuberculous disease of the skin. At first, Dr. Ryfkogel was not able to find the parasites in the cultures, and Dr. Flexner and Dr. Opie also tried to get them, but failed. Finally, Dr. Ryfkogel succeeded in finding them, as he realized after studying the sections made by Dr. Montgomery that the parasites were in the dense fibrous layers of the skin, and that none was on the surface. He found that in this case it was impossible to produce the disease experimentally by subcutaneous injections. Dr. Ophüls had the same experience with the cases he studied. It was easy to inoculate animals intraperitoneally. Of 100 animals inoculated, all developed caseous abscesses in all parts of the body, but only two out of the 100 developed pulmonary symptoms. These two died of miliary coccidioidal tuberculosis of the lungs, none of these abscesses being present. The original case suddenly developed symptoms that led to a diagnosis of pneumonia, and from this complication the patient died. There were no bone lesions, but the skin lesions were very extensive. There was enlargement of the suprarenal capsules with caseation, the size being that of a large orange. There was an acute miliary tuberculosis of the lungs, due to the fungus, not to the tubercle bacillus.

THE OCULAR ORIGIN OF "MIGRAINE."*

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If one looks into the etymology of the words megrim, hemicrania, the megrims, or migraine, he finds that the words are in origin identical; moreover, the complex, nowadays designated by these silly and meaningless terms, is made up of a hundred symptoms having nothing to do with half-headedness; and most of them are of vastly more importance than half-headedness, or even than pain on or in one side of the head. If one glances at the literature of the history of "migraine," he finds that scarcely any two authors understand the same thing by the word. If one consults present-day textbooks and monographs on the subject, there is the same confusion and misunderstanding. If one should ask any score or hundred of physicians for a definition and clinical picture of the disease, there would be the same astonishing indefiniteness and contradiction in the answers. If one should ask as to the etiology, there would be the most numerous, amusing and disorderly array of a hundred causes. If one seeks to learn what organs are affected, the answers, if any are hazarded, would be found equally wide of the mark. The affection in all its forms and types is tremendously common, and yet about it exists the most amazing ignorance and opposition of view. As to therapeutics—well, professional powerlessness, utter and absolute, is confessed. Up to now our impotence has been as complete as our nescience.

Unwary authors sometimes speak of a "typical case of migraine," without explaining what they mean by the term. Text-books, dictionaries and professors seek, indeed, to indoctrinate the student with ideas of the typicalness of various diseases, even of "migraine," but woe to the practitioner who tries to find a case in actual life. In a broad way, and serving as a suggestive and useful distinction, however loose, all diseases may, in truth, be divided into those which usually run a typical course and those which are rarely or never typical. The more uniform and similar the course of any disease in different patients the more certainly it may be ascribed to a single, simple cause, acting on a single organ or set of organs. Such diseases are those which are highly infectious, such as yellow fever, typhoid fever, smallpox, etc. Even here, of course, the seed is not all and the soil of no importance, for the typical picture always has some slight or great variations in the outworkings of large numbers. Of the atypical diseases, migraine is, by all odds, the leader. Any detailed description is at once false and impossible. No case-history is like that of another. This is, first, because its cause, eyestrain, is of a thousand different kinds and intensities, two cases never being alike; and, secondly, because vision is bound up in some way with almost every physiologic function and necessity; it is united with every nerve-center, every bodily and psychic activity. Thus the infinitely varied morbid cause or seed is planted in an infinitely varied soil. So important is the eye itself to life and to the organism that the morbid reflex is usually not allowed to wreck itself on the eyeball, but starts at first to morbidize the cerebral organs. Hence, headache is, of all the symptoms of so-called migraine, the most constant and frequent. The low degrees of ametropia, especially astigmatism, never to be quite overcome, but the attempt to do so never to be avoided, harm the general system worse; the high defects harm the eye the most.

In a rough way we may say that the symptoms most bespoken in this disease may be grouped in six classes:

1. Periodicity, or alternation of attack and freedom from attack; but no two cases showing the same law either as to length of time between attacks, or during which the attacks last.

2. Scotoma scintillans, if occurring, always preceding the headache; half of the time not followed by headache or other symptom.

* Read at the meeting of the American Academy of Ophthalmology and Otolaryngology held in Buffalo, N. Y., Sept. 14-16, 1905.

3. Headache, insided, outsided, one-sided, both-sided, front-sided, back-sided, top-sided, bottom-sided, of a hundred different kinds, intensities, and characteristics, and ascribed to a thousand different causes.

4. Nausea, retching or vomiting, of all possible irregularities, regularities, intensities, lengths, present in a minority of cases; the vomiting, when occurring, clearing up the crisis in a majority of cases, and followed by a re-establishment of temporary health. The nausea, patients say, is worse than the vomiting.

5. Psychic and nervous symptoms, such as dejection, often proceeding to profound depression and even to suicidal tendencies, together with nameless and indescribable sufferings, each person's descriptions differing from another's, but all agreeing in seeming exaggeration, with possible insomnia, "hysteria," "neurasthenia," "nervous break-down," etc.

6. Physical symptoms accompanying the attacks, or following them, or replacing them during the intervals between, such as anesthesias and hyperesthesias of many kinds, extents and intensities, paralyses, functional cardiac diseases, aphonia, influenzas and "colds," digestive disturbances and dyspepsias, skin diseases, "rheumatisms" and localized pains, spinal or shoulder pains, neuralgias, and many other symptoms.

With one or more of these classes of symptoms absent, with two or more classes mixed in a limitless number of combinations and degrees, it is evident that there can be no "typical case," and the attempt to set the confines and describe the symptoms implicated is highly absurd. All late authors lessen the difficulty, first by a vagueness, which is a crying *confessio ignorantiæ*, and then they cut out of the list Classes 5 and 6, i. e., the psychic and physical concurrents and consequents; usually, also, they do not know what to do with the pestiferous scotoma scintillans. As the periodicity is never alike, is, indeed, if present, infinitely variable, this also has to be ignored. This leaves simply headache, combined with nausea or vomiting, which, of course, should simply be called "sick headache." But never did two patients have the same kind and degree and continuousness either of headache or of stomach rebellion, and we are landed in a farcical *reductio ad absurdum*. But the solemn neurologists do not know it, and they keep crying that any described case is not migraine, not "typical," doesn't fit in their boxes, is hysteria, nonsense, a contemptible oculist's whimsy. Some of these gentlemen assume the air of Mark Twain's jumping frog, make great exertions, but they never get "forrarder" by one inch. They fling a bombastic word, "psychosis," "dementia præcox," "hysteria," "neurasthenia," etc., at the poor patient, order her to the sanitarium or to Europe, prescribe bromids, placebos, or the rest-cure; they then prepare the next edition of their text-book in which ignorance of nervous diseases vies with therapeutic nihilism. If the oculist says he knows a cause and a cure for many cases, Dr. Dana will inform him that "the only real mental affection connected with eye strain is the symptom-complex with grandiose ideas on the part of ophthalmologists." Dr. Fisher will also add:

> The oculist is not expected to have such a knowledge of these diseases, either pathologically or clinically, as would make his opinion of any special value, and, therefore, his statements and opinions should be taken only in such a sense as from his limited horizon of observation a partial understanding of these conditions renders possible.

Shakespeare and Molière in collaboration could not do justice to the antics of some of our modern neurologists, neither to some of our defunct commercial medical journals, whose ghosts are sometimes draped so realistically by their publishers that one would almost think them really medical and as much alive as the famous Mr. Partridge and his almanac. The *Medical Brief*, the *Medical Mirror*, the *Philadelphia Medical Journal*, the *New York Medical Journal*, the *Medical News*—how from their graves they hate and belabor the oculists! The *News*, even after its death, was heard to gibber that at least 20 per cent. of our citizens have gastric ulcer which the surgeon should excise at once. Think of 16,000,000 American citizens being ordered to be gastrotomized in the next 24 hours! But that, of course, is better than spectacles!

When one carefully observes this attitude of mind it becomes evident that these opposers and ridiculers are most anxious to find that the sufferers from migraine, epilepsy, neurasthenia, hysteria, melancholia, indigestion and headache are, thank God, incurable. Their fury in ridiculing the refractionist, their blindness to his truth, their immoral misrepresenting and misreporting him, their editorial malevolence, are indicative of "much." If they had a spark of true scientific spirit, they would be glad to examine a theory and the facts supporting it which might bring some light into their darkness as to the origin of "migraine." If they had the least therapeutic zeal they would like to cure some of their patients of diseases they have all admitted incurable. If they had the least pity in their hearts of human suffering they would grasp at even a slight possibility of lessening the agonies of millions of their fellow-citizens. But of some neurologists and editors of defunct commerciomedical journals one scarcely expects humanity or medicine. What, then, shall be said of oculists who join them? Nothing, except to wonder what kind of refraction they are doing, not to have seen every day their patients cured of these diseases by the glasses ordered. Were there a scintilla of the true investigator's spirit in their minds they would themselves put on their own noses the glasses that we say cure these patients, and test the theory. In a week they would have all the migraine needed, at least, to reduce even them to silence. I will guarantee to produce by this laudable human vivisection experiment, in the skeptics and cynics, any desired degree of "neurosis," "migraine," "neurasthenia," "hysteria," "melancholia," "dementia præcox," "degeneration," "nervous break-down," "neurotic predisposition," "katatonic state," "major psychosis," "melancholia of involution," "psychical tonus or contracture," "forme fruste," "manic depressive insanity," "confusional psychosis," "pseudoneurasthenia," "mysophobia," "topoalgia," "neurasthenical syndrome," and the rest. And all with a pair of 0.75 D. cylinders! The committee appointed must be composed of non-presbyopes and made up equally of neurologists, the editors of defunct commercial medical journals, and ultraconservative "opthalmologic surgeons."

There is hardly a case of severe eyestrain reflex that, viewed in the life-history, does not show a persisting morbid cause acting on the organism, as it were, from without. Balzac said that when he did not have head misery he had digestive wretchedness, and *vice versa*. In the majority we see this cause attacking one organ after another, upsetting the normal functions of the mind, brain, stomach, liver, heart, lungs, skin or eliminative organs, and all according to the kinds of ametropia present and the amount of work demanded of the eyes. Eye-rest at once gives relief. When presbyopia is added, some one organ is often incapable of further

normal function, and there is an end of life. Of what use are the empty words, "neurosis," "neurotic inheritance," "psychosis," etc., in such cases? Their users are tragical jokers both with science and humanity. Every good refractionist knows that the little fallacy underlying their bad logic is that, in the past, accurate refraction has not been secured for the sufferers, or that, rarely, prevention has been ignored until chronicity has made cure impossible. Not even a pair of spectacles can raise the dead.

It all comes back to the test of facts. I have epitomized a few random notes I happen to have of cases reported by good physicians of the cure of migraine by glasses. I could doubtless have gathered hundreds more if time had permitted.

For instance, about seventy years ago Pjorry caught a glimpse of the true relation of the eye and megrim; he thought that "monophthalmalgia," or "iralgia," affections of the peripheral nerves of the eye were the cause of migraine.

To Dr. William Thomson, of Philadelphia and of America, is undoubtedly due the credit of first demonstrating in a general way the causal relation of eyestrain to these nervous and migrainous disorders. This part of the history I have elsewhere indicated and epitomized. In 1876 Mitchell, in reporting Thomson's cases, might have honored himself and the profession by seeing that migraine is due to eyestrain. He came near it; but finally and clearly he balked, and neurology again failed to realize its possibilities.

About the same time Dr. R. Brudenell Carter, in his treatise on "Diseases of the Eye," 1875, reports the case of a patient with palpitation of the heart,[1] headache and sickness (Anglice, nausea and probably vomiting), attributed to disease of the brain; he was first sent to Australia without betterment; he gave up business and a proposed marriage, his "prospects in life blighted." A pair of glasses cured him of all symptoms.

The first physician to lay down clearly the proposition that sick headache is due to eyestrain was Dr. G. C. Savage.[2] To him, therefore, all honor. He was an American. He announced that he had discovered the "real cause" of sick headache to be hypermetropic astigmatism, and that its successful treatment consisted in the use of proper glasses. Savage made a minor and natural mistake in limiting the cause of migraine to "hyperopia and astigmatism, either alone or combined," but he did not commit the egregious blunder of rushing to tenotomy; he did not even speak of heterophoria. The brilliancy of the discovery and the bravery in announcing it, on Savage's part, almost, if not entirely, counterbalance his subsequent silence, mysterious and insoluble, of twenty-five years, on this revolutionizing subject. Savage describes the circumstances that led up to his discovery and the rationale of the method of the cure of sick headache by glasses. His own is the first case reported. [It is, indeed, a pity that every physician in the world is not a sufferer from the disease. He could, of course, be cured with ease, and the generation-long shame of ignoring and opposing a truth of enormous importance would end as suddenly as yellow fever in Cuba.] Savage's mother had had as violent sick headaches as her son, but age, of course, had cured her. Atropin was as effective in our colleague's case, and glasses made the cure permanent. His sister, too, was cured in the same way, and also his preceptor, Dr. Clark. Savage comments wisely on the false views of the authors of text-books of medical practice on the subject and on their utter ignoring of the matter; he adds:

> Although sick headache is as common as it is dreadful, Bartholow and other writers on the practice of medicine have not said a word about it.

In 1883 Lauder Brunton, not a crank oculist, wrote[3] as follows:

> But frontal headache is not the only one which may arise from abnormal conditions of the eyes, for megrim or sick headache is very frequently associated with, and probably dependent on, inequality of the eyes, either in the way of astigmatism, myopia or hypermetropia.

In 1883 Lauder Brunton, not a crank oculist, wrote[3] fact that "correction of the eyes by cylindrical glasses relieved not only the headache, but also the intermediate dyspepsia, insomnia and irritability of temper liable to occur in patients between the attacks of megrim."

In 1886 Dr. Ambrose L. Ranney[4] said that "the symptoms of sick headache are reflex in character, to a large extent, and are due primarily in almost every case to some optical defect."

In 1887 Dr. George T. Stevens issued his noteworthy book, "Functional Nervous Diseases," etc., in which he made what I judge is the beginning of a huge mistake in saying that "unlike the ordinary forms of headache migraine does not so frequently yield to simple measures of adopting glasses to correct refractive errors." The common inaccuracy at that time in correcting errors of refraction may, at least partially, excuse this error. It is noteworthy that of five cases reported in this book the first four were reported as cured without tenotomy. It is, I think, unfortunate that the operation was not also omitted in the thousands of cases since.

The next, and of all hitherto the most scientific, demonstration of the ocular origin of "migraine" was made by Dr. G. Martin.[6] He reports in all 352 cases, with details, of the ametropia, etc. (mostly low degrees of astigmatism, of course)—a truly noble work. One's patriotism suggests the wish that he had been an American.

In 1889 George M. Gould[7] reported the cure of cases of chorea, severe dyspepsia, cardiac palpitation, sick headache, sexual disorders, etc., due to eyestrain, and in January, 1890, others of similar nature,[8] such as stammering, paralysis, anesthesia, chorea, gastric disorders, aphonia, etc. In August, 1890, he wrote,[9] "Sick headache, there can be little doubt, is very often, if not generally, due to eye strain, etc. In 1891, in reporting[10] on 833 cases of headaches, this man found 73 cases clearly to be classed as sick headache, and he then said, "Ninety or ninety-five per cent. of cases are due to the eyes." He now says 99 per cent.

Dr. George E. de Schweinitz, in an address before the Medical and Chirurgical Faculty of Maryland, April 26, 1900, said:

> It is unquestionably true that fully 75 per cent. of ocular disorders depend on anomalies of the refraction, accommodation and motility of the eyes. Correction of such faults is followed by the greatest good to the eye and to the general organism in which the strain has been interpreted by symp-

1. It is remarkable how often eyestrain is found to produce tachycardia or other functional cardiac symptoms. I think that exophthalmic goiter is usually, if not always, due to the same cause.
2. Medical and Surgical Reporter, July 29, 1882.
3. St. Bartholomew's Hospital Reports, vol. xix, 1883, p. 336.
4. Medical Times and Gazette, March 21, 1885.
5. N. Y. Med. Jour., Feb. 27, 1886.
6. Ann. d'oc., 1888.
7. Med. and Surg. Reporter., Feb. 9, March 9, 1889.
8. Am. Jour. Med. Sci., January, 1890.
9. Med. News, Aug. 23, 1890.
10. Journal A. M. A., Sept. 19, 1891.

toms not necessarily suggestive of their origin. When one comes to think about them, these symptoms stretch out into an extraordinary train, but we have ceased to wonder, and as a matter of course investigate or cause to be investigated the eyes whenever searching for the etiology of headache of all kinds, vertigo, nausea, pseudo and habit chorea, neurasthenia and other disease phenomena of similar manifestation. We have learned that many so-called gastric troubles, tachycardia, flatulent and other types of dyspepsia, indigestions, night terrors, especially as they occur in children, may have a like origin, and we have found out that pains strangely and persistently situated in the nape of the neck, between and under the shoulder blades, at the end of the spine and deep in the mastoid may owe their origin to the same cause. These facts are widely, I think I may say universally, known, although, curiously enough, many of the most important of them find no place in the most used text-books on general medicine.

Dr. James Hinshelwood[11] writes:

Such headaches due to errors of refraction may be extremely severe, sometimes accompanied by vomiting, and may even interrupt the patient's work (sic!). They resemble an attack of megrim, but they differ from true megrim in their bilateral distribution, and in the absence of any of the higher visual phenomena, such as fortification figures or defects in the visual fields.

One is glad to have the testimony, all the more convincing because of the writer's residence in an etymologic and clinical antiquity.

Dr. S. W. S. Toms[12] reports a case of "typical" sick headache in a man of 26 existing since he was a schoolboy, with vomiting, prostration, fainting attacks, facial pallor, small, thready pulse of high tension and frequency, the attacks lasting from one to three days. There was numbness of the extremities, scotoma scintillans, etc. For eight months after Dr. Toms ordered glasses the man had no attack; then there was one, due to bent spectacle frame; later he broke his frame and there was another attack. Other cases similar in nature are reported by Dr. Toms.

Dr. Peter A. Callan,[13] of New York, writes of migraine: "I have frequently found that correcting 0.25 D. of astigmatism has given complete relief." He cites one case of "a lady, ten years ago, who had suffered long and frequently from migraine, who was cured by wearing glasses." He concludes, from an extended experience of years, with hundreds of cases, that he is "forced to regard eyestrain as the cause in over 75 per cent. of all the cases of functional headache and migraine." This was in 1891; in a personal letter Dr. Callan says that years before this he "claimed that eyestrain is the cause of migraine, and acted accordingly.

Sydney Stephenson[14] reports a case of headache, four times a week, usually lasting all day, and "now and then terminating in vomiting. In fourteen months after glasses had been prescribed there had been only a few slight attacks. Another case reported in the same article was that of a medical student with such severe headache and nausea that his parents thought to put him to another occupation. He was entirely cured by glasses. Both these patients had unsymmetric astigmatism. In a second article[15] Mr. Stephenson says "megrim is an affection that in my experience is often connected closely with ocular defects." "This," he adds, "is no new observation."

The following cases are reported by Stephenson:[16]

Let me quote the following case where the sequence of cause and effect appeared to be singularly free from fallacy: A very intelligent medical friend had suffered slightly from megrim since he was 7 years of age, but as he got older, and especially as he was reading for his professional examinations the bouts had become severer and more frequent. He was affected, in fact, with classical "blind headache." The attacks began with a colored scintillating obscuration of central vision, and as this passed away, as it generally did in five to ten minutes, intense unilateral headache supervened. The attacks were always associated with nausea. They were brought on by (a) indigestion (b) straining the eyes, as with the microscope. There was a family predisposition to megrim; the patient's mother and sister suffered severely from the affection, and two of his children were also affected. The headache, as a rule, did not last for longer than an hour, but on one occasion it persisted for four days without intermission. General remedies did little, if any, good. At last, at the age of about 30 years, the slight hypermetropic astigmatism (0.5 D.) was corrected with spectacles for constant wear. The result was almost magical. The headaches became fewer in number and milder in character, and this has continued until the present time, some fifteen years after the glasses were prescribed. It may be added that severe headaches can still be induced by attempting to use the eyes without glasses.

In the next case the relief afforded by weak glasses was very prompt and striking: Grace C., aged 22, consulted me in November, 1902. She was a fine, robust-looking country girl, but had always been subject to headaches, which had become worse during the last two years. The pain, which was ushered in by ocular spectra, affected the frontal region, and generally lasted a whole day. It was followed by vomiting. She generally had two or three such headaches during the week. The eyes were stated to ache and to get red after close work. The headaches were definitely induced by reading or working. General medical and dietetic treatment had proved useless. On examination no defect of the external ocular muscles could be found; there was 1 D. of hypermetropia in the right eye and 0.75 D. in the left eye. Spectacles correcting this small amount of long sight were ordered for constant wear. After six weeks' use of glasses Miss C. reported that there had been no return of the headache, and that there was no aching, etc., of the eyes.

Stephenson correctly contends that migraine is not very rare in childhood. He cites the following case:

I have met with fairly typical attacks in children as young as 6 years. The following case, although occurring in an older child, may be quoted because one or two unusual symptoms were present: George D., aged 10, had suffered from three attacks of megrim, the first in the autumn of 1900. The attacks commence with an alteration in speech and a numbness of the right arm, and are followed by persistent vomiting. There is a strong family history of typical hemicrania, preceded by hemianopsia, in the mother and several of her people. The patient, on examination under atropin, was found to be affected with an extremely low grade of hypermetropic astigmatism, and the weakest cylinder of the trial case (+ 0.25 D.), with its axis horizontal, was ordered for constant use. In the result, the megrim disappeared completely, and had not returned when the patient was seen a year afterward.

Dr. George H. Thomas,[17] of Minneapolis, says:

I have come to a settled conviction that . . . among these neuroses [due to eyestrain] I would place in order of frequency neurasthenia (which might include insomnia, irritability, weariness, and mental confusion), nervous dyspepsia, vertigo (including some forms of car sickness and sea sickness), and, finally, migraine. Every oculist has had cases of migraine which have certainly been permanently relieved and sometimes completely cured. I could quote from my records typical cases, etc. Why eye-strain produces in one person headaches, in another blepharitis; in one nervous dyspepsia, and in another general nervous prostration; in one migraine, and in another epilepsy, is still a subject confined to the realm of theoretical speculation, logical and convincing as that might be made to appear. What we do know, however, is that there

11. Glasgow Medical Journal, November, 1900.
12. Med. News, Nov. 3, 1900.
13. Journal A. M. A., March 28, 1891.
14. The Medical Press and Circular, Feb. 4, 1903.
15. Ibid., Feb. 11, 1903.
16. Med. Press and Circ., February, 1903.
17. Northwestern Lancet, June 1, 1903.

is a large amount of clinical evidence, which is growing larger every day, which shows that when certain patients with a great variety of neurotic symptoms are relieved of their eye-strain, in many of them these symptoms also disappear.

Mr. N. Bishop Farman[18] describes his own case of migraine "neurovascular storm," "associated with the visual centers," and caused by incorrect glasses.

Dr. Zimmerman,[19] in his elaborate study, excludes from his table cases of hemicrania without nausea or vomiting, and also, most strangely, twenty-five cases of bilateral headache in which nausea and vomiting appeared. I say "strangely," because the etymology of the word, half-headedness, has long been put aside as having anything significant of "migraine." Dr. Zimmerman then tabulates what he calls his "true migraines"—"9 cases caused by eyes," 8 cases cured by glasses," and "3 cases improved by glasses."

Drs. S. Solis-Cohen and A. A. Eshner, general practitioners of Philadelphia, were the first in any American text-book on medical practice (issued in 1892) to acknowledge frankly that migraine may be due to eye-strain. In 1904 Dr. Cohen[20] has said further:

The dependence of migraine on eyestrain as an exciting cause in a large number of cases can no longer be denied by the most doubting Thomas. . . . Unquestionably it is a truth of vast significance. Unquestionably physicians have not yet fully realized that significance.

Dr. George F. Libby[21] epitomizes the reports of ten cases suffering from nausea and headache combined, in which "correction of the refractive error gave relief in each case." In three cases with nausea unassociated with headache, relief was obtained in two cases, the third not reporting.

Dr. A. L. Derdiger[22] reports a severe case of chorea of fifteen years' continuance, with migraine symptoms, completely cured by glasses relieving her unsymmetric astigmatism. Another of Dr. Derdiger's patients was a lady, aged 24, with atrocious migraine for five years, the crises occurring once or twice a week. The patient's symptoms would make the neurologist cry hysteria! with a loud voice, and consign her to the rest-cure, or to the bow-wows. I, therefore, must quote her own description of her hypochondriac symptoms:

I have been a sufferer for years; in one day I have about fifty diseases, my head and stomach especially. I can not eat. If I eat the lightest food, then I have indigestion; so I don't eat at all. I can't sleep, and if I do sleep for a few minutes I have such horrible dreams; I dream I am here, there, and everywhere. If I sleep a little I am always moaning, for pains are all over my body. First my back, I can't stoop, then my chest, all down my sides, my shoulders, my legs; then the pain goes toward my stomach and head, and the pain stops there. I have been to vegetarians and they told me not to eat meat, so I have not eaten meat for years. I have been to Christian scientists, and they have prayed with me, aloud and in silence, and kept it up for a long time, until I lost courage. I have taken all sorts of massage and tried all sorts of remedies for years. I see there is no improvement, but the reverse. I can't even wash a cup.

I have taken treatment from mental scientist and electric doctors, and all kinds of doctors, for a long time, but the pain became so severe that I can't stand on my feet but a few minutes before everything turns black before me. I get dizzy, buzzing in the ears, my sight grows dim, the heart palpitates, my whole body quivers, a cold sweat breaks out all over me, I feel deathly sick to my stomach, the bowels get loose, and the pain becomes so severe in my head and stomach that I am obliged to fall on the bed; sometimes I stay in bed a few hours, other times two or three days. I always thought that I had a complaint in my heart, but the physicians have examined me in private and at the hospital and said my heart was well. Even when I wash myself the pain I have is terrible; sometimes I feel so heavy that I can't move myself, and I also have a burning in my body. This burning kills me altogether, for it leaves me very weak. I have been taking music lessons, but after a half-hour practice I have such pains that even the nails of my fingers ache. After singing awhile the letters become blurred, my voice becomes husky, and the eyelids twitch so that I tremble all over.

With each attack she was forced to go to bed, and intense nausea and vomiting was always present. Three mydriatic testings were required to bring out the unsymmetric astigmatism and anisometropia, the right axis at 105°, the left 90°. She was completely cured by her glasses. Dr. Derdiger's third case was one denominated "classical neurasthenia," also cured by ocular treatment.

Dr. J. Herbert Claiborne[23] says:

I can cite several cases [of migraine] in young adults, in whom the recurrence of the periodic attack and all the accompanying symptoms have been absolutely prevented by the correction of an ocular defect. . . .· I reiterate the statement that I have had a number of cases in my practice in which the recurrence of sick headache has been absolutely prevented by the corrections of refractive errors.

Mr. Simeon Snell[24] says:

Many instances of this disorder [migraine] in which the classical symptoms are present will be relieved by giving attention to ocular errors. Two medical friends who have been closely associated with me have experienced an almost entire absence of the disorder since their astigmatism was corrected. . . . Vomiting and nausea are also symptoms. . . . It is well known that they are prominent and well-recognized symptoms of some eye diseases. . . . The remedy for the condition met with in these cases is attention to the eyes.

Mr. Snell describes a number of illustrative cases, one of which was of a very severe migraine, cured by glasses.

Dr. Myles Standish, after quoting a number of statements which he characterized as dogmatic and misrepresenting, from reviews in THE JOURNAL of the American Medical Association, the *Ophthalmic Review*, the old-time *Medical Record*, the *Medical News*, etc., said before the Boston Society for Medical Improvement, Dec. 5, 1904:

After having listened to the above extracts, I think you will readily agree with me that it ill behooves the authors of these editorials and book reviews to accuse Dr. Gould of extravagance of statement. . . .

It must have happened to every oculist who has prescribed glasses for patients suffering from migraine that when the patients returned after two or three years they related that they had been entirely relieved until quite recently, and that the return of the migraine and other nervous symptoms made them think that their glasses should be changed. After examination a change usually seems advisable, and they will probably return again two or three years later and repeat that they were immediately relieved by the glasses prescribed and that their symptoms have only again recently returned. Such cases are by no means uncommon. . . .

You will have noticed that in the extracts I read you in reference to migraine great stress is laid on the fact that migraine is often inherited, but, gentlemen, are not eyes inherited? It is very common to find similar refractive errors running through a whole family, and I myself have cognizance of one well-known family in which there were twenty cases of convergent strabismus in three generations.

18. Med. Press, Nov. 18, 1903.
19. N. Y. Med. Jour., Nov. 21-28, 1903.
20. Science, April 29, 1904.
21. Colorado Medicine, March, 1904.
22. Chicago Med. Recorder, 1904.
23. Journal A. M. A., Dec. 10, 1904.
24. Biographic Clinics, Gould, vol. III.

Dr. Allen Greenwood,[25] of Boston, says of the backward school-child whose objective symptoms are those of eyestrain that "frequently the complaint is of increasing headache so that on arriving home the little sufferer has to be put to bed with what is called sick headache."

Dr. Edwin E. Jack,[26] of Boston, says:

In just what proportion of cases of migraine the nerve storm is caused or precipitated by ocular strain I do not know, but I have no doubt of the connection in very many, and it would seem to me a grave omission in all such cases not to put the eyes into the best possible condition for work, even when there are no local symptoms. . . . Experience teaches that nausea, dizziness, dyspepsia, "the blues," nervousness and irritability, insomnia, brainfag, neurasthenia and a general inability to take up the burdens of life, may all be influenced, aided or brought about by the ever-present effort of the eyes to overcome an imperfect shape or balance. To one who has seen many times the mental wreck which eyes can cause, such a connection is far from incredible and, indeed, does not seem unusual. It is, of course, hard for many to see this standpoint. The man who reads in a moving, joggling car, with his glasses askew, and has always done so with no hint of discomfort, can not understand why I, many times under similar circumstances and in a very few minutes, have nausea and an upset stomach. This would easily prove to me, even if I were not an oculist, that the eye can affect the stomach, and experience teaches me that it can be a factor in other things as well. It would be easy, I think, to demonstrate some of these symptoms by wearing prisms placed in a certain way, or by the use for a while of cylindrical lenses with wrong axes.

Dr. Edward Payson Morrow[27] says:

It is fairly well understood that headaches, vertigo, confusion of ideas, nausea, and many allied symptoms, as well as functional disturbances of remote organs, may have their origin in eyestrain.

Dr. Frederick E. Cheney, an oculist of Boston, says in a personal letter:

As to sick headaches, I certainly expect to cure the greater proportion of them.

The editor of the *St. Paul Medical Journal*[28] says:

That headache, insomnia, night terrors, nervous dyspepsia, sick headache, migraine, and a host of other similar symptoms result from eyestrain, and are relieved by proper glasses, every physician, and especially every oculist, is well aware.

Dr. S. D. Risley, Philadelphia, has reported cases of the cure of "typical migraine" by means of glasses, and expresses himself as generally agreeing with the thesis.

Dr. W. H. Carmalt, New Haven, asks, "What ophthalmologist has not had the same or similar experiences?"

Dr. A. G. Bennett, Buffalo, "heartily indorses such conclusions."

Dr. W. F. Southard,[29] San Francisco, writes:

There is no specialist who has kept an accurate record of his cases for a series of years but will bear Dr. Gould out in his conclusions.

After a half-century of personal experience in conscientious refraction work Dr. John Green says:

To me the central and very significant fact is that the prostrated sufferings, always alleviated by rest from eye work and always recurring with the resumption of studious pursuits, as portrayed in the several biographies from which you have culled, are such as ophthalmic practitioners recognize as dependent, in many persons, on common ocular defects, and as preventable or curable by properly directed optical treatment. . . . It is surely not an extravagant contention that eyes which do not perform their function perfectly in all respects and under all conditions, or whose use is attended or followed either by local disturbances or by headache, nausea, insomnia, or other reflex manifestations, ought, without exception, to be promptly and critically examined. That such examination will very often bring to light a previously unrecognized ocular defect, and so point the way to urgently needed relief through wearing properly chosen and properly adjusted spectacles, needs only to be stated to command assent. The knowledge that relief from headache may come through wearing glasses is becoming more and more widely diffused; but comparatively few physicians have learned, as yet, to recognize the protean forms which reflex disorders of ocular origin may take on, or to estimate at its true value the service which a wise and conscientious ophthalmic specialist may be able to render.

The investigation and treatment of functional disorders dependent on structural imperfections of the visual organs call for the exercise of the minutest care, and often of almost infinite tact and patience. That the essential qualifications are sometimes conspicuously lacking in men eminent for their achievements along other lines is also true. Careless or perfunctory refractive work by an ophthalmic specialist will yield no better results than similarly defective work done by persons of inferior scientific attainments and of vastly less reputation.

At the 1905 meeting of the American Academy of Ophthalmology and Otolaryngology, either publicly or by personal communication, many members expressed themselves as assenting in a general way and in varying degrees to the proposition that "migraine" or sick headache is caused by eyestrain. Dr. Carhart of New York said that when we are able to overcome the total ocular defects we can cure all cases. Dr. Weeks said that perhaps 75 per cent. of cases are curable by ocular treatment, but that the claim of a higher percentage was not justified. Dr. Baker of Cleveland said, "Let us be honest and frank. We all cure such cases every day."

Mr. C. Ernest Pronger,[24] Harrogate, England, considers extensively the cases of headache with nausea, retching or vomiting, and reports many cases of typical migraine—if the word may be used—or sick headache; many had been treated by other physicians for years, with no relief until proper glasses were ordered. It is noteworthy how often the attacks recurred when the glasses were not worn, or were broken, until the patients learned the lesson. Mr. Pronger suggests that suicide is frequently due to eyestrain, the melancholia, nervous debility and insomnia being so frequently associated with the symptoms.

Brav[30] reports three cases of persistent vomiting in school children, associated with headache, dizziness, convulsive movements, etc., completely cured by correction of astigmatism, and he concludes that in school children vomiting is very often caused by astigmatic errors of refraction.

Dr. A. Ernest Gallant of New York (personal communication) thus writes:

I most emphatically know that, in women at least, not less than 25 or 30 per cent. of sick headache depends on eyestrain, and in my own practice in the neighborhood of 300 have been cured by wearing glasses when fitted by competent men. I learned to look for this condition after reading your first paper in the *Medical News* some years ago, and have thus relieved many whom others have failed to cure. This fact can not be too strongly impressed on the minds of students, and must be hammered into the graduates of former years, etc.

Another general physician, Dr. H. Jarrett, Camden, N. J., says:

It has been my personal observation with several hundred people to find headaches as well as gastric disturbances entirely relieved by proper refraction or wearing appropriate glasses. I may go still further and speak of the vast number

25. Boston Med. and Surg. Jour., Feb. 23, 1905.
26. Boston Med. and Surg. Jour., Feb. 23, 1905.
27. Cleveland Med. Jour., April, 1905.
28. St. Paul Med. Jour., March, 1904.
29. Pacific Medical Journal, April, 1904.
30. N. Y. Med. Jour., Aug. 26, 1905.

of nervous patients in whom the neurotic symptoms have entirely disappeared by relief of eyestrain or ocular treatment.

Dr. Howard F. Hansell, Philadelphia, writes:

I believe that sick headache is one of the symptoms of eyestrain, and I have known patients that were cured by ocular treatment.

Drs. Stockton, Starr, F. Park Lewis, Pohlman, Phillips, Hubbell of Buffalo, Jackson of Denver, Ellis of Los Angeles, Roberts of Pasadena, Westcott of Chicago, Willetts of Pittsburg, Lovett of Langhorne, Pa., Ball, Sherman of Cleveland, M. N. Bemus of Jamestown, N. Y., Spalding of Portland, Maine, Alleman of Brooklyn, N. Y., Pyle and Thorington of Philadelphia assent to the following: "I believe that sick headache often depends on eyestrain, and have known cases that were cured by ocular treatment."

Subnormal accommodation, I suspect, is far more common than is supposed, and I have suggested that it largely accounts for our failures, as oculists, to cure migraine. I have reported a number of cases in which correction of this weakness, besides the distance glasses, as bifocals, alone enabled me to cure in many most distressing cases of sick headache. One was that of a boy of 12, with most alarming and continuous vomiting. Despite my best distance-correction, the pernicious vomiting came on daily when he began to study. By adding 1.50 D. to his distance glasses as a (premature) presbyopic or bifocal segment, there was instant and permanent relief. I have prescribed bifocals in a healthy child of 9 years of age, in which the premature presbyopia was from 1.50 to 2.00.

I could give the details of perhaps a thousand cases of "migraine" or sick headache cured by glasses. I should say that 90 per cent. of cases are immediately curable, and a large proportion of the rest curable in time, and so soon as the secondary systemic functional effects have been overcome. A few cases are incurable, because these secondary effects have become organic or too chronic to allow any cure. There are also rare cases in which mental reaction has become impossible.

Of the skeptics, cynics, ultraconservatives, who smile derisively at all this, I wish simply to ask by what right, ophthalmic, neurologic, humane or human, by what logical or scientific right, they dispute the testimony of Piorry, William Thomson, R. Brudwell Carter, Savage, Lauder Brunton, Hewetson, Ranney, Stevens, G. Martin, Gould, de Schweinitz, Toms, Callan, Stephenson, George H. Thomas, Farman, Zimmerman, Libby, Derdiger, Claiborne, Snell, Myles Standish, Allen Greenwood, Edwin E. Jack, E. P. Morrow, Cheney, Burnside Foster, S. D. Risley, Carmalt, Bennett, Southard, John Green Carhart, Weeks, Baker, Brav, Pronger, Gallant, Jarrett, Hansell, Stockton, Starr, Lewis, Pohlman, Phillips, Hubbell, Jackson, Ellis, Roberts, Westcott, Willetts, Lovett, Ball, Bemus, Spalding, Alleman, Pyle, Thorington and others? These men report many hundreds, doubtless could report thousands of cures of severe or "typical" migraine "by means of the relief of eyestrain." Are these men unworthy of belief? Are they not as honest and as scientific, as good physicians as the deniers? The conclusion must be that if the deniers have not seen such results they have not done the kind of work which produces the results. Negative testimony is in such cases utterly valueless as against the positive testimony of those who have seen the results. Conform to the rules of science, play the game fair, and the exhibits will prove the thesis. If it is said, "True, but exaggerated," then is the admission more condemning than the pooh-pooh or the denial. "How true?" we then ask them. Demonstrate the limit; verify the little admitted! Show the exaggerators up as pseudoscientists, and even as liars. Convince the poor, tormented millions you can't cure, that the hope held out to them is a delusion. How they will thank you! And remember that if you err too much or too little, by so much as a grain in getting your exact pound of flesh, woe to you! There is this hour more personal wretchedness and torment caused by "migraine" than by all the combined diseases of the world. It not seldom causes death, indirectly, secondarily, but still absolutely. If you fail to save one life that might be saved, what is it but murder? But prolonged suffering for a lifetime, and of the most atrocious kind which migraine produces, is worse than death. If relying on you, if by neglect, if by a glib and spurious science, one sufferer fails to find a possible cure, yours the infamy! God may not exist, and professional ethics may prove a delusion, but justice will look out for the man who takes the health and happiness of his brother in his hands and wrecks them with the sneer of callous ignorance!

RESPIRATORY MOVEMENTS OF THE BRONCHIAL TUBES.*

E. FLETCHER INGALS, M.D.
CHICAGO.

Last summer while doing bronchoscopy on a child about 2 years of age for the removal of a foreign body from one of the branches of a main bronchus, my attention was arrested by the rhythmical dilatation and contraction of the main bronchi and their branches during inspiration and expiration. This movement was so great that in inspiration the diameter of the tube was sometimes more than twice as great as in expiration. Similar movements were shortly afterward observed in the trachea, also in another young child, although I had not observed these movements in three adults on whom I had done the operation. From this fact I surmised that the movements were not present in the larger bronchi of adults for the reason that they were prevented by the greater rigidity of the cartilages, but it seemed probable that they extended throughout the smaller bronchi at all ages. A more recent operation on a boy of 13 showed that the respiratory movements, even of the main bronchi, were very well marked at that age. I did not notice such movements in a girl of 17, but in that case I unfortunately did not observe whether or not they were present in the first divisions of the bronchus. Last August, aided by a student of medicine, Mr. W. W. Hamburger, I made some experiments on a dog in the physiologic laboratory of the University of Chicago to acquire further light on this subject. The animal was of medium size, weighing 6.5 kilos, and was about 10 months old. It was thoroughly anesthetized by morphin and chloretone. The anesthetic was administered by a stomach tube, and consisted of chloretone gram 1.3 and morphin gram, 0.3 dissolved in 50 c.c. of a 50 per cent. alcoholic solution.

Mr. Hamburger did tracheotomy. On inserting the bronchoscope we found that the main bronchi and all of their visible branches expanded and contracted regularly with inspiration and expiration, the diameter of the tube in contraction during expiration being only from two-fifths to one-half of that at the end of inspiration. We placed two ligatures on the right vagus and

* Read before the American Climatological Association, Detroit, June 28-29, 1905.

cut between them. We then found that the movements of the bronchi still continued, though apparently within a narrower range; but on stimulating the distal end of the divided nerve with a weak electric current, the contractions were more pronounced, and they continued for several seconds until the stimulation was discontinued.

In this experiment, by stimulating the vagus nerve, the caliber of the bronchus was reduced from one-fourth to one-third of its diameter during inspiration. These observations indicate that while the movements were in part passive—that is, the result of the bellows movement of the chest wall, which, as Professor Stewart states, is well understood—they were also in part dependent on muscular contractions resulting from the action of the vagus nerve. A more recent experiment of my own on a smaller dog, apparently 2 or 3 years old, showed that the movements of the main bronchi continued at that age and that the contraction of the muscles in the first branches were in some instances so great as to cause complete collapse of the tube.

I was unable to find references to this action of the bronchi in any of my own medical works, but Prof. George N. Stewart of the University of Chicago and Prof. Jacques Loeb of the University of California kindly gave me several references to the mostly brief paragraphs or sentences referring to this subject in physiologic writings. Professor Stewart, in a personal letter, says:

> Longet[1] showed that the vagus contains motor fibers for the bronchial muscles as early as 1842. Donders[2] stated that in deep respiration the bronchi became wider and shorter in inspiration and narrower and longer in expiration. Einthoven[3] and Beer[4] have investigated carefully the innervation of the bronchial muscles. More recently, Dixon and Brodie[5] have shown that the vagus contains both constrictors and dilators[6] for the bronchial muscles, which can be excited directly and reflexly. Whether this mechanism is in action in normal respiration is not discussed, to my knowledge, by any of these recent authors, and the whole question . . . has been rather neglected by systematic writers. Such direct observations as you have made have not found their way into the physiologic literature, if any are recorded, and yet they have a distinct interest for physiologists. In the paper just cited, Chauveau[7] is quoted as stating that "in the horse the bronchioles show some tonus which disappears on section of the vagus, for he found that if the vagus be cut on one side, the vesicular murmur on that side disappears, and it is weakened on the opposite side."

Dr. J. Gordon Wilson of the Hull Laboratory (Department of Anatomy), University of Chicago, has taken up the investigaton of this subject with me, and has kindly furnished me an extended abstract of Einthoven's article.[8] This article extends through eighty pages and appears to cover everything that is known on this subject. Dr. Wilson writes:

> The movements of the bronchi have been investigated repeatedly, but the results are conflicting. The results of Einthoven, as well as those of Dixon and Brodie, were obtained by artificial respiration. Their experiments were directed to measuring the air-volume of the lungs during the phases of respiration under specified conditions; thus Dixon and Brodie enclosed a lobe of the lung in a metal oncometer and so measured alterations in volume during respiration. The bronchoscope offers another point of attack. It affords an opportunity of directly observing the movements of the bronchi under what must be regarded as more normal conditions. It may be regarded as satisfactorily shown that constrictor fibers for the bronchial muscles run in the vagus nerve. But so many anomalous conditions have been observed after stimulation of the peripheral end of a divided vagus nerve that many have concluded that not only constrictor fibers for the bronchial muscles are present, but that broncho-dilator fibers must also lie in this nerve. Einthoven denied the presence of such dilator fibers, but the recent work of Dixon and Brodie seems to show that such fibers must be present to explain the results obtained. Whether or not this explanation is entirely satisfactory still remains to be seen.

Einthoven especially has pointed out the important part these muscles may play in disease, especially in asthma. But he concludes that "the significance of the bronchial muscles in normal respiration is small; and what use the bronchial muscles have, what causes their presence and development, we venture no conjecture."

Dr. Wilson suggests that "although the bronchoscope has its limitations, since the finer bronchi are beyond our view, yet there are other points which it may enable us to investigate. Among others it should be possible to observe whether tonus exists in the bronchial muscles, disappearing on section of the vagus, as is claimed by Chauveau and denied by Einthoven and by Dixon and Brodie. It should be possible to observe the effects of peripheral stimulation on the bronchi and the immediate action of the most active drugs."

I can hardly approach this subject except from a clinical standpoint, but Dr. Wilson has taken up the investigation with me, and I hope that we may accomplish something. In the meantime, I hope that research workers will also take up this work by which some valuable facts should be discovered.

The first question suggested to my mind is, what influence has this action of the bronchial tubes in the production of the physical signs heard over the lungs?

The statement of Chauveau just cited offers a possible explanation, entirely different from that generally accepted, for the production of the vesicular murmur.

I have seen several cases, most of them in the last stage of diphtheria, where, although the respiratory movements seemed normal and the bronchioles and air cells appeared to be free, the vesicular murmur was absent and the signs impressed me as due to paralysis of the lung itself. Although I could not understand such a condition, I have cautiously suggested it to two or three medical friends, but without obtaining any information.

I have recently examined a patient who has been subject to asthma all her life, who said that she had had one, two or three attacks every day or night for years. In this case, in an interval between paroxysms, the vesicular murmur was not more than from one-sixth to one-fourth as loud as normal in either lung, although there were no râles and no signs of vesicular emphysema or other disease of the lungs. The question arose in my mind whether the feebleness of the vesicular murmur was not due to deficient innervation of the bronchial muscles, and whether the attacks of asthma might not be due to irritability resulting in excessive paroxysmal action of the contractile muscles analogous to the action of the myocardium in palpitation; and somewhat analogous to the excessive contraction of the abductor muscles of the vocal cords that close the glottis, which seem to retain their function longer than do the muscles of abduction, in some cases of paresis of the recurrent laryngeal nerve.

This action of the bronchial muscles probably has much to do with the production of râles in bronchitis. We are familiar with the contractions occurring in inflamed muscular fiber, and this may explain more sat-

1. Comp. Rend. vol. xv, p. 500. 1842.
2. Zeitsch Vat. Med., iii, p. 292. 1853.
3. Archiv. für die ges. Physiologie, 1892, vol. 51, p. 367.
4. Archiv. für Physiologie, 1892, supplem., p. 101.
5. Jour. of Physiology, 1903, vol. xxix, pp. 97-173.
6. Einthoven denies the presence of broncho-dilators.
7. Semaine Médical, 1889, p. 147.
8. Pfleuger's Archiv., 1892, p. 367.

isfactorily than has been done heretofore the multitudinous more or less persistent râles heard in acute bronchitis, whether these râles be dry or moist.

I have often asked myself how air can be drawn into bronchial tubes filled with mucus, but I thought I could understand how it could be forced out if it once got in; however, by the same reasoning I was unable to satisfy myself why all of the smaller bronchi and the air cells did not on the advent of inflammation of the bronchial tubes become speedily filled with secretion or else collapsed. The theory that the ciliary motion on the surface of the mucous membrane toward the larger tubes carried the secretions upward and outward never appeared to me satisfactory; but if my hypothesis is correct, it explains how the pumping action of these tubes, in connection with the movement of the air, can readily accomplish this result. If experiments should ultimately show us that this contraction of the bronchi in expiration begins at the periphery and works toward the larger tubes, as from analogy we may readily believe, we will then know how the secretions are evacuated from the air cells and the smaller bronchi. The same line of thought brings us to a new viewpoint in studying the sudden development and subsidence of râles in asthma. The respiratory movements of the bronchi and their dependence on muscular activity explain the sudden accession of attacks of asthma resulting from irritation of the pneumogastric nerve, and also show us why inhibition of this action quickly relieves the distressing dyspnea.

We are taught that the bronchial breathing heard in pneumonia is the normal sound of the tubes better transmitted to the surface in consequence of the solid medium. This has never been to me a satisfactory explanation, but I can now understand how the consolidated lung by preventing the bronchi from contracting will yield the characteristic tubular sounds that we find in pneumonia like those produced in a metallic or other rigid tube.

Paresis of these muscles may account for some of the phenomena of pulmonary edema. Impairment of this function may also account for the curious cases that we sometimes meet of functional dyspnea, while lungs, heart and kidneys yield no evidences of disease. The severe attacks of dyspnea in renal disease also may possibly be in part dependent on interference with the respiratory movements of the bronchi.

Dr. Norman Bridge informs me that from personal experience and from the testimony of intelligent patients he several years ago became convinced that the bronchi were relatively collapsed in expiration, and that as a result, the phlegm could be raised at the end of expiration by a gentle explosion of cough and with not more than a quarter of the usual blast of air of a coughing effort. This indicates the importance of this function in relieving the distress of some persons afflicted with pulmonary tuberculosis, especially when from weakness they have difficulty in expelling the sputum.

The difficulties experienced in discovering small objects in the bronchi through the bronchoscope, even under bright illumination, are doubtless largely due to the action of the bronchial constrictor muscles, which may possibly completely close the tube in which the foreign body is ensconced. A recent experiment on a dog appeared to demonstrate the correctness of this hypothesis. In that case, after demonstrating the bronchi and their movements to a class of students, I dropped a pin, head downward, through the bronchoscope into the lung. Although it was very easy to see a pin that had been dropped into the hollow of my hand tightly closed about the end of the bronchoscope, I had very great difficulty in finding the pin at all in this experiment; indeed, I searched for it with the greatest care for fifteen or twenty minutes, but was unable to see it. Finally, I passed down beyond the bronchoscope an instrument termed a pin finder, which I had devised for the special purpose of bringing a pin or other small object into the center of the lumen of the bronchus. Turning this gently about a few times, I thought that I felt the pin; then, crowding the bronchoscope down a little farther so as to encompass the upper portion of the pin finder used in the search, I withdrew the instrument, and inserted a small electric lamp, which enabled me to see about one-fourth of an inch of the pointed end of the pin projecting into the lower end of the bronchoscope, while the remainder of the pin was completely hidden apparently by complete collapse of the bronchus.

The experiments made by Dr. Wilson and myself have been done on dogs, anesthetized with either morphia or chloroform, or both. The experiments are only in their initial stage, and not yet sufficiently numerous to enable us to arrive at definite conclusions. They bear out my observations, however, about the rhythmical dilatation and contraction of the bronchi during respiration. In quiet inspiration the smaller tubes can be seen to dilate to twice the diameter they have during the respiratory pause; during the expiration following they almost close.

Stimulation of the peripheral end of the sectioned vagus nerve produces constriction; at times the immediate result appears to be a dilatation—a result which Dixon and Brodie obtained also. Similar results have also been observed after stimulation of the mucous membrane of the nose. We hope to continue these investigations and, later, to be able to report the result more fully.

We believe that the action of remedies may be profitably studied through the bronchoscope in the living animal, and that as a result of such study we shall doubtless obtain much more intelligent and effective therapeusis in some affections of the heart and lungs.

Important observations on the effect of drugs on the bronchial muscles have been made among others by Einthoven, and by Dixon and Brodie. The latter investigators classify certain drugs as broncho-constrictors, others as broncho-dilators.

As a result of their investigations, Dixon and Brodie have arrived at the following conclusions, among others:

1. The inhalation of ether or chloroform for anesthetic purposes abolishes the effect of the vagus on the bronchioles. This is due to the paralysis of the nerve-endings by direct absorption through the mucous membrane.

2. Reflex bronchiolar constriction is best obtained by exciting the nasal mucous membrane. Little or no result has been obtained by stimulating the sciatic, central end of the vagus, superior laryngeal or cornea.

3. Gradual constriction of bronchioles followed by dilatation is usually seen postmortem.

4. Muscarin, pilocarpin and physostigmin excite the vagal endings and induce typical bronchiolar constriction, the effect of which is abolished by atropin.

5. Barium, veratrin, bromin and the salts of many of the heavy metals (e. g., gold) produce constriction, which is not influenced by atropin.

These facts are suggestive in the therapeusis of many cases in which expectoration is difficult.

6. Inhalation of CO_2 leads to constriction of the bronchioles, which is not altogether central in origin.

7. Chloroform, ether, urethrane, lobelia and atropin induce dilatation of the bronchioles when constriction is present. The dilatation produced by lobelia is very transient, while that by atropin is permanent.

These facts should aid us materially in relieving spasmodic asthma.

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A CASE OF IMPERFORATE RECTUM WITH ABSENCE OF THE ANUS.

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Oct. 25, 1903, R. K., male, was born under my care. His mother had already given birth to four other children, all perfectly formed. He was born at full term, head presentation, R. O. A. No anus at all was to be seen. The raphe ran from the base of the scrotum to the tip of the coccyx. There was phimosis and the second and third toes of both feet were webbed. There was a slight dimple in the medium line of the back over the center of the sacrum. The base of the penis was drawn toward the scrotum, making it much longer anteriorly than posteriorly. The mother is disposed to attribute these malformations to a rather severe felon she had seven months before the child's birth.

When the boy was 30 hours old he was held in the exaggerated lithotomy position, and, without the use of anesthesia, a trocar, one-fifth inch in diameter and two and one-half inches long, was thrust by Dr. J. A. Hawkins into the perineum where the arms should have been and in the direction in which the rectum should have been, into the hollow of the sacrum. When the trocar was about all introduced, lack of resistance was noticed, the stylet was withdrawn and meconium came out through the canula. As soon as the meconium ceased to flow, the canula was withdrawn, the bowel was washed out with an enema containing olive oil and the opening was enlarged with a knife sufficiently to allow the introduction of the little finger. The rectum could easily be felt at the bottom of the wound. The bowel seemed to be firmly attached to the surrounding tissues, so that it was not thought best to attempt to pull it down and attach it to the external wound. The bowel was situated about two inches from the perineum. A soft rubber catheter, 20 French, was inserted through the wound into the rectum and left there, secured with a safety pin. Absorbent cotton was placed over the perineum, held in place by a diaper. The rectum was so firmly attached to the surrounding parts that it was not at all displaced by these manipulations.

In five hours the baby was resting quietly. The next morning the catheter was withdrawn and some meconium was discharged. The bowel was washed out and the little finger was inserted into the rectum, causing some bleeding. The rectum at this time seemed to have descended a little toward the perineum. The catheter was reinserted and left in. On the evening of this day the baby refused to nurse, his temperature was 102 and he was in a state of collapse. The next morning he was better and tried to nurse. The catheter was withdrawn, the bowel was washed out and the wound was dilated with the little finger, causing some bleeding. Same procedure in the evening.

On the following day the mother's milk supply failed and the baby was put on modified milk.

At the end of the fourth day no bleeding was caused by the dilatation with the finger. On the fifth day the baby passed feces for the first time. The wound was thus dilated with the finger night and morning for eleven days. At each insertion of the finger the rectum seemed to have descended nearer and nearer to the perineum. The catheter was kept in the wound for only five days. On the eleventh day the use of the finger as a dilator was stopped, meatus sounds, 30, 35 and 40 French, being used instead.

The baby did not do very well on the modified milk, and for several weeks we despaired of raising him. At the end of a month the sounds were used but once a day, then every other day, then once a week, and finally but once a month. At the end of two months the rectum had descended almost to the perineum.

Now that the boy is over 20 months old, the mother says that the movements from his bowels are the same as those of her other children when at his age. As a rule, he lets her know when his bowels are to be moved.

On examination the anus is somewhat funnel-shaped. The sphincter is in good working order; in fact, practically perfect, but is about one-half inch higher up than normal. A person examining him now, not knowing what the condition at birth had been, would find his anus about the same as that of any other child. The dilators are used now once a month, but they cause no pain. It is probable that their use might safely be discontinued.

This case belongs to the third species of Bodenhammer's[1] classification of the congenital malformations of the rectum and anus. In all the cases of which I have read I can find no one treated exactly as was this one. We were very fortunate in the outcome, and probably would not be so successful again. Bodenhammer advises against the use of the trocar in these cases, but recommends dissection with the knife until the rectum is found and then its pulling down and attachment to the external wound in the perineum.

Jacobi gives a case in which he put in a trocar and meconium oozed from the wound. He then put in a dilator and dilated the wound, but in two days death resulted from peritonitis. A postmortem showed that the trocar had passed into the bowel, but also into the peritoneal cavity, into which the meconium had escaped, giving rise to peritonitis.

He also says that there are several ways in which this malformation may occur. The anal orifice in the fetus is formed by an invagination of the outer surface, the tube thus formed meeting and uniting with the rectum. The septum between the two tubes becomes absorbed and the lumen of the tube is complete. Now, sometimes the septum does not become absorbed. It may exist at the anal orifice itself, obstructing the bowel at its very entrance; or, again, the anus itself may be normal, yet this septum may exist unabsorbed some distance up the bowel, an inch or an inch and one-half. Here the ends of the tubes have met and united, but the septum has not been absorbed.

Again, the two tubes may not meet at all, but may be separated altogether by areolar tissue (as in my case); or, again, instead of meeting end to end, they may meet sidewise and so touch only at one point, as in the case given above, in which the trocar entered both the bowel and the peritoneal cavity.[2]

The great objection to the method of simple puncture and incision in complete obstruction is that it exposes the tissues, especially the peritoneum, to septic infection. In my case antisepsis was as carefully carried out as possible. The fact that the gut was so firmly attached to the surrounding tissues greatly aided the good result. Here some of the fibers of the sphincter and levator must have been present and some of the areolar tissue between the bowel and perineum must have become absorbed, allowing them to come together.

My case well supports Bodenhammer's dictum, that in the newborn time and long experience have taught us that nature is more capable of greater adaptation than in adults, and that in the young child the original defects of development are subsequently compensated, if art will only give a helping hand in accomplishing her purpose. The surgical treatment of these malformations has been most exhaustively treated by Rudolph Matas.[3]

1. Bodenhammer: A Practical Treatise on the Etiology, Pathology and Treatment of the Congenital Malformations of the Rectum and Anus. New York, 1860.
2. Medical and Surgical Reporter, vol. xlviii, 1880, p. 337.
3. Amer. Jour. Obst., vol. xxxvi, 1897, p. 628.

THE PSYCHOSES OF HEART DISEASE.*

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The task of classifying the psychoses caused or aggravated by disease of the heart is not easy. Eliminating organic disease of the brain, it is probable that disease of the heart is responsible for more cases of psychic disturbance than is disease of any other organ. It is notable that but brief attention is accorded to this etiologic phase of insanity and allied psychoses by textbook authors, probably for the reason that heart disease is in most instances regarded as a result or simple complication and not as a cause. A further explanation of the possible oversight rightly to place heart diseases in the etiology of mental disturbances is that, primarily, the psychic phenomena of the milder forms of heart trouble, such as palpitation, are usually insufficient to constitute insanity and are looked on as unimportant. Secondly, the severe forms of heart disease producing active mental disturbance, incapacitate the victim for undue violence, weaken his power of decided physical activity, and constitute an excellent reason for his treatment in the wards of a general hospital where his mental infirmities are regarded as subordinate to his physical ones, with the result that, while the latter are carefully considered, the former are usually regarded as of small consequence. I do not at all take issue with this method of caring for such cases, believing that it affords opportunities for treatment that are as good as, or better than the public asylum, in which the organic phenomena are not unlikely to be subordinated to the purely psychic, with the result that the latter, or symptom, is treated, while the former, or cause, is apt to receive scant attention; and in the forms of psychosis due to severe heart disease, it appears that treatment directed at the physical infirmity is after all the essential thing, so that such cases are valuable more for comparative and etiologic purposes than for therapeutic reasons. But in the milder forms such reasoning is distinctly bad, for the mental disturbance must not only be carefully analyzed, but treated coincidently with the cardiac disease, whether that be organic or functional. And it is important to trace the relationship between the two, as to which is cause and which effect; for it is certain that if cardiac disease can cause mental disturbance, no less can mental disease cause cardiac disturbance, as witness the irregularities and palpitations easily produced in neurasthenics by suggestion.

It is possible to divide the psychic disturbances of heart disease according to their etiology into those due to:

1. Local sensations usually not painful, whereby the patient becomes aware of some cardiac abnormality, as in palpitation, irregularity, tachycardia, bradycardia or excessive loudness.
2. Local pain, as in angina pectoris, endocarditis, pericarditis, or compression from pericardial effusion.
3. Disturbances in circulation.
   a. Vasomotor constrictions.
   b. Feebleness of heart's action with cyanosis.
4. Secondary lesions in the brain.
   a. Embolism from valve lesions.
   b. Edemas and effusions from incompetency.

From the standpoint of symptoms the psychic phenomena of heart disease may be divided into:

1. States of fear or apprehension, usually accompanied by more or less panic, and alternating with some depression and irritability, without being accompanied by active delusions or hallucinations.
2. Delusions founded on misinterpretations of local cardiac phenomena, such as pain.
3. Active hallucinations and delusions from circulatory disturbances involving sensory organs.
4. Dementias from secondary lesions in the brain.

In such classifications as the above it must be remembered that one division may shade into another imperceptibly. Any of the symptoms of the second classification may occur with any of the causes of the first, and, indeed, the symptoms of any of the various subdivisions may be associated with one another with kaleidescopic possibilities. And yet it may be said that as a result of Class 1 of the first classification the symptoms of Class 1 of the second are the symptoms most likely to be encountered. In like manner the second class of each classification will most frequently be found related, and the third and fourth classes likewise, but to a less extent. It will be found, however, that the symptom of fear is commonly found in all the subdivisions and classes.

To Division 1 of the first classification belong all those cases of cardiac palpitation and irregularity witnessed in neurasthenics. In these cases the heart usually presents no evidences of abnormality when the patient is at ease, except that it is somewhat hypertrophied and rapid. Attacks of palpitation come on without warning or apparent cause. At other times disturbances of rhythm result from excitement, emotion, or gastric disturbances. Often at night the patient awakens with a violent start, finds his heart beating like a trip hammer, rises to a sitting posture, grasping his chest, and becomes apprehensive, irritable, excited, incoherent and irrational. Following such an attack he develops what might be called cardiophobia, living in constant fear of a recurrence, and not infrequently working himself into a state of excitement resulting in severe tachycardia or palpitation, with an intensification of the fears and doubts of preceding seizures. He demands close attention, sympathy and repeated assurances of safety, and is afraid to be left alone. After an attack the patient is sleepless, morbidly depressed, emotional and irritable.

CASE 1.—J. M., aged 26, born in U. S., farmer, entered sanitarium in June, 1904. A typical neurasthenic. Physical appearance rugged. No evidences of organic abnormality except increase in rapidity and loudness of heart sounds. While on half-rest treatment, was awakened one morning from nap by violent palpitation, accompanied by great terror and anxiety. I saw him within ten minutes and found his pulse 140, heart slightly irregular, no murmurs. Face was pale, terror stricken and wet with perspiration of fear. He insisted he was going to die and demanded attendance and encouragement for one-half hour, when his heart having ceased to beat so violently, he became calm. He had numerous similar attacks during his stay with us.

CASE 2.—C. L., aged 38, born in U. S., politician and postmaster. Physical appearance remarkably healthy. Heart sounds accented and frequency from 92 to 100, ordinarily. Saw preceding case in attack described, and within twelve hours experienced seizure bearing striking similarity. The attack was repeated about every third night, usually around 2 a. m., and patient refused to go to sleep without first being visited, when assurances that he was all right and free from

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-sixth Annual Session,

danger calmed him. The next day he was always more restless and emotional than before the attacks, and for months lived in terror of them. He has since recovered sufficiently to perform his official duties.

In the first of these cases the cardiac disturbances acted as a stimulus to the excitable nervous system and bore the very distinct relation of a cause for the intensified psychic phenomena. In the second case apparently suggestion produced palpitation and thus the heart trouble might reasonably be regarded, at least in part, as due to the psychic disturbance.

Not only may these disturbances of rhythm with abnormal mental phenomena be witnessed in ordinary neurasthenics, but also in pronounced degree do they occur in the cases of so-called Pennsylvania heart of Stockton. These cases are seen in their most classic aspects in lumbering regions, where men subject themselves to great strain for long periods, achieve cardiac hypertrophy, and follow it with complete cessation from hard work. As a result the heart becomes irritable and subject to attacks of palpitation and rapidity. The seizures in many instances are accompanied by minor disturbances of mind as witnessed in the following case:

Case 3.—L. L., lumberman, aged 44, born in U. S., admitted to county hospital in 1895. Physical appearance robust. All organs normal except heart, which was hypertrophied and rapid, about 120 per minute. On exertion he developed palpitation and became excited and apprehensive. Following attacks he was irritable and quarreled with nurses and attendants, patients and physicians. Was unruly and refused to obey orders. Finally dismissed for insubordination. Was at all times fully aware of his physical infirmity and its dangers, and when free from attacks, tractable and obliging, but declared that he could not control actions described with seizures.

In another subclass of cases there is more pronounced cardiac disturbance and likewise more marked mental phenomena. A typical example of such was Case 4.

Case 4.—C. J., aged 28, born in Germany, cook. Admitted to County Hospital, Feb. 13, 1896. Present illness began five days ago with vertigo, pain in chest over heart, and dyspnea. The slightest exertion causes patient to become so weak and tired that he is obliged to go to bed. He states that effort is followed by coughing spells, which last until he has had a rest of several hours. Examination: Heart is enlarged, 92 per minute. While undergoing examination heart suddenly became exceedingly rapid and irregular, first sound being bell-like in tone. There is no murmur. Patient grasps chest, breathes hard, face expresses intense fear, actions emotional, articulation indistinct and sentences incoherent. Following this, he was seized with convulsions, from which he could be aroused by sharp orders and threats. The seizure thus presented many of the classic phenomena of hysteria, with decided departure from customary hysterical or normal mental actions. While under care, these attacks were repeated a number of times and it was noticeable that the cardiac disturbances preceded the mental in every instance. The administration of nitroglycerin was uniformly followed by prompt improvement in pulse and mental symptoms. There was at no time pain in the region of the heart. With rest and nitrites the patient's condition was such that he was able to resume work in a month. The visiting physician, a well-known consultant in New York state, diagnosed this case as "nervous heart" and later "neurosis of the cardiac ganglia," a striking commentary on the possibilities of nomenclature to conceal ignorance of exact conditions.

Passing on, one comes by natural processes to false and true angina pectoris and in these cases witnesses some of the most interesting but distressing phenomena of mind associated with heart disease. The following case is unique in my experience:

Case 5.—Male, aged 37, single, admitted to Manhattan State Hospital May 15, 1897. Born in Ireland. Foreman of excavating gang. Temperate. Family history good. Repeated attacks of articular rheumatism. On admission, was excited and hysterical. Burst into tears when being questioned and said: "I am worrying for the sins I have committed. Adultery and other sins, sir." Appearance depressed and melancholy. Body somewhat emaciated. Pulse weak and running 160 to 180 per minute. Apex beat diffuse and two inches to left of nipple in greatest intensity. Relative cardiac dullness much increased. At apex, sounds were loud and bell-like. There were no murmurs, but sounds were transmitted to axilla, and all over chest were heard with metallic intensity. When patient moved the heart became irregular and more rapid, and this was always accompanied by mental excitement. While under care, patient experienced a number of attacks of mild cardiac pain with what he called "rheumatism" of his left shoulder, and at such times always became emotional, hysteric, incoherent, irrational and finally maniacal, but amenable to some degree of control. An ice bag to the chest, rest in bed and the use of heart tonics and vaso-dilators invariably produced quiet.

Eliminating those cases of true angina pectoris in which during the attack there is fear of death—which is well founded and therefore not properly to be regarded as abnormal—there are yet some cases of angina pectoris in which the repeated attacks have produced psychic disturbances such as are illustrated by the following:

Case 6.—P. C., aged 32, admitted to County Hospital March 28, 1896. Alcoholic and heavy smoker. Had grip and pericarditis two years ago. Entered for treatment of acute bronchitis. While convalescent, developed attacks of angina pectoris with terrific pain. He was often able to inhale as much as 1 dram of nitrite of amyl without relief, which finally came only with chloroform anesthesia. Attacks were accompanied by terror, excitement and incoherence of speech, and following these he became offensive and obscene in language, threatening and unreasonable until sleep came on, from which he awakened quiet, tractable and with but partial remembrance of the events of the seizure.

Misinterpretation of local cardiac sensations and delusions built thereon was well witnessed in two cases in which the pathologic conditions were similar. The mental phenomena were fairly typical of two somewhat opposite phases of insanity, yet bore in each case striking relationship to the degree of acuity and character of the general symptoms.

Case 7.—J. K., aged 62, laborer, admitted to County Hospital February, 1896. Examination showed consolidation of posterior portion of base of left lung, which was diagnosed as bronchopneumonia. Heart 84 to 92. Temperature 101 to 102. Mental disturbance pronounced, but differed from ordinary febrile delirium to such an extent that he was looked on by the visiting physician as an insane case in which the lung trouble was simply an accident. He was confused and incoherent in speech, muttered constantly, was sleepless and declined food. He refused to lie down, declaring that a huge vise was clamping his heart and that he must sit up to watch it. Also that electric currents were coming up through his bed magnetizing the vise. His facies was typical of a low form of acute mania, and his general conduct corresponded. He died at the end of a week, and necropsy disclosed an unexpected purulent pericarditis, with about four ounces of pus. There were numerous adhesions binding the apex of the heart to the pericardium in front. The fluid, although small in quantity, really distended the sac, and it was easy to understand the production of symptoms, resulting almost logically, one might say, in his delusions.

Case 8.—W. L. L., aged 62, German, admitted to County Hospital May 15, 1905. There were the characteristic physical signs of bronchopneumonia of left base. Within a week he became depressed and melancholic and suffered from insomnia. Talked to himself and ate but little. After two weeks was able to be up about ward and appeared to be influenced by hallucinations of sight and hearing. His heart

was about 116 to 120, and during the night he frequently complained that weights were put on his chest whenever he lay down to sleep. The mental state was one which I have since frequently observed and considered as mild simple melancholia. He died suddenly forty-four days after first visit. Necropsy showed purulent pericarditis with 16 ounces of pus and enormous distension of pericardium. The lung was not involved except by compression.

In Cases 7 and 8 sepsis unquestionably influenced the mental state, yet clearly the cardiac lesions were responsible for the character of the resulting delusions.

The preceding cases illustrate throughout phases of mental disturbance dependent on abnormal sensations in the region of the heart, and except in the last two cases, recognized by the patients as due to disturbance of that organ. But there is a distinct class of cases in which, though the heart is diseased, the patient is unaware of it, and yet has pronounced mental symptoms directly traceable to the organic heart trouble and in no sense due to the secondary organic consequences thereof. Of such are the following:

CASE 9.—W. M., aged 19, male, well educated. Mental trouble, judging from history, dated back one month, when he left home for a neighboring state to seek work. He was there arrested, charged with insanity and brought to our sanitarium in November, 1904. On admission, he was depressed, melancholy, delusional, and suffered from auditory hallucinations. There was a faint murmur over the aortic area, probably due to slight stenosis, but not at that time regarded as of importance in relation to the mental phenomena. With rest, patient became cheerful and improved. After a few days he complained of cold and numbness in extremities and hands and feet were found blue and cold to touch. The heart murmur was louder than at first, the melancholic depression greatly aggravated and accompanied by suicidal tendencies. Regarding the cyanosis as due to vasomotor disorder, belladonna was administered. There was prompt disappearance of the peripheral cyanosis, an improved pulse and a return to a more nearly normal mental condition. Withdrawal of belladonna was followed after a few days by return of the cyanosis, this time with a feeling that the hands were dead, and accompanied by aggravation of mental symptoms with hysterical outbursts. Belladonna again relieved the cyanosis, and its disappearance was followed by decided mental improvement. After four months patient showed evidence of beginning dementia with continual auditory hallucinations.

This case I regard as one of dementia præcox, having an hereditary basis, with the cardiac disease as the distinct exciting cause of onset.

During the time Case 9 was under care we had another patient with a double mitral murmur, whose mental phenomena were typical of acute mania.

CASE 10.—Mrs. H., aged 56, married, no hereditary influence. Recently removed from the East to Oregon. Had lost her home in fire previously, had brooded much over this misfortune and weight was considerably reduced. One week before admission to the sanitarium, she became suspicious, quarrelsome, and finally, while laboring under a delusion, assaulted her husband. On admission she was maniacal, incoherent and sleepless. Was anemic and had temperature of 101. The heart was exceedingly irregular with double mitral murmurs and typical gallop rhythm. There was no edema and no evidence of focal cerebral involvement, such as might have been due to embolism. Patient was put in resting sheet and fed through nasal tube. No improvement for several days. Digitalin was then administered by hypodermic, and as the heart's action gradually became steady, the mind improved coincidently. She had several relapses with excitement, increase of delusions, vivid hallucinations of sight and hearing, and the performance of irrational acts. In each instance these attacks were preceded or accompanied by recurrence of the cardiac irregularity; in several instances the attacks were directly traceable to undue physical activity. With tonic treatment, in addition to the digitalis, cardiac compensation was restored, and in six weeks the patient was taken home by her friends, quiet, tractable and orderly.

The relation of the heart and mental diseases was here unmistakable. The shock of loss of home followed by transplantation can scarce bear the relation of more than predisposing elements. Loss of appetite followed, then dilatation of a weak and diseased heart. Insomnia and the mental phenomena were the logical outcome. There was striking contrast in the symptoms of these two latter cases, in that the outbursts of excitement in the vigorous and independent old woman were substituted for the hysterical, helpless attacks of the constitutionally weak natured boy. In his case also there was an astonishing relation between the asthenic cardiac disease, the feeble circulation, and the slow, depressed, and confused mentality. While in her case there was exhibited a violent, restless, active and racy mind which but kept pace with the irregular riotous circulation, and galloping, tempestuous heart.

Coming to the last class are first, those cases of embolism in which valvular vegetations are the cause of organic brain lesions. Such cases are too frequent and well recognized to need comment and it is safe to pass to the remaining group, in which the secondary results of heart disease, the arterial dilatations and tortuosities, edemas and toxemias, result in mental disturbances which, were they not associated with unmistakable heart disease, would be classed as true insanities.

The variations in these cases are numerous, but in the main certain more or less distinctive symptoms are recognizable. The first of these are ocular and auditory hallucinations. The former are doubtless due to tortuous retinal arteries, often albuminuric, and are of a vividness comparable only to the hallucinations of sight in acute alcoholism, in which the immediate cause, i. e., arterial dilatations in the retina, appears to be identical. Occasionally the auditory hallucinations occur independently, but for the most part they are founded on the ocular misconceptions and interpretations, and on both a series of delusions is based. The remaining cases illustrate this well.

CASE 11.—C. N., aged 37, German, was brought to County Hospital Jan. 21, 1896, because his family found it impossible to keep him longer at home owing to outbursts of excitement and violence. On admission, he was suffering from endocarditis with insufficiency, and had dropsical limbs. Mental phenomena were insomnia or restless sleep, from which he was disturbed by haunting dreams. He insisted that he had just seen his wife enter dormitory and heard her speak to the nurses and other patients. Declared that she refused to speak to him, but waved her hand derisively, and on this basis built up an elaborate system of delusions of her infidelity and persecutory attitude toward himself. This statement, with slight variations, was repeated daily until death occurred two months after admission. Contradiction invariably resulted in violent excitement, accompanied by incoherent, abusive and blasphemous language, followed by great exhaustion.

CASE 12.—M. G., aged 46, German, admitted to County Hospital July 22, 1895. Had double aortic murmur and mitral insufficiency. With the gradual development of dilatation and edema, patient became restless and irritable. He complained of strange visitations, claiming that he saw people in the ward who went out through the windows, hooting and shouting at him. On this he constructed a series of delusions of persecution involving other patients, nurses and physician. He lived nine and one-half months after admission, alternating but little from a steady and gradual progression of heart symptoms, with as regular an accompaniment of the

mental phenomena, until about one month before death, when he became partially demented.

The gross postmortem findings in the two immediately preceding cases were edema of the limbs, abdomen, and brain. The heart conditions substantiated the findings of the physical examinations.

Case 13.—W. B., aged 44, German, formerly a hard drinker, was brought to sanitarium because his family was unable to keep him at home, as he was noisy, excited and delusional. Had well-recognized heart disease. On examination he was found to be suffering from general edema. Heart dilated with loud mitral insufficiency murmur. He slept badly, groaning and muttering. Usually awakened with a start and an appearance of fright. Spoke of seeing people in the room and heard them talking about him, but, as a rule, indistinctly and not unpleasantly. Unwilling to take medicine for fear of poison. Very irritable, cross at times, confused. Was under care seven weeks, and died two days after an embolism of the left middle cerebral artery, this being confirmed by autopsy.

Throughout the histories, in the interests of brevity, all extraneous matter has been omitted. In some of the cases cited there were possible hereditary and other etiologic elements. It is not my intention to regard such details slightingly and in every instance the aim has been to describe both heart and mental symptoms in a manner to best show their relationship to each other. It is not contended that the heart disease in every case was the sole cause, but rather that it was the exciting cause, except wherein the cardiac troubles were rather the effect, and to this attention has been called. Especial insistence is placed on the relationship of mental improvement to therapy directed against the heart trouble. In selecting the histories, only cases under personal observation were used, and no reference has been made to the cases of heart disease occurring in the chronic insane, for there is no reason why insanity should protect against such accidental complications. Also less than one-half the actual histories preserved with a view to presenting a paper on this subject have been used, for the reason that in many cases the relationship between the heart and mental disease was obscured by some other trouble, as in one case of alienation due apparently to aortic aneurism and endocarditis, in which there was a history of syphilis. In the absence of positive knowledge to the contrary, it was assumed that there may have been a syphilitic cerebral lesion. An extremely interesting case under care as this paper is being completed has also been omitted. In this case the patient came under care with highly acute maniacal symptoms. His heart was examined, as well as his active movements would permit, and no murmurs discovered. When, after a week, the excitement somewhat subsided, it was noticed that his respirations were rapid and his lips cyanosed. Examination revealed a loud mitral insufficiency murmur and great dilatation. From his wife a history of articular rheumatism was obtained, together with the statement that he had been rejected for life insurance three times because of heart disease and accepted on different occasions by three other companies. Under the circumstances it seems probable the murmur depended in part on dilatation under the strain of the maniacal excitement and thus was a pure and simple complication. It is noteworthy that even here, as soon as the lesion was discovered and digitalis used, the cyanosis disappeared, the murmur softened, and the improvement in the expansive and confused mentality was markedly accelerated.

All the cases cited, with one exception, were observed in a general hospital or private sanitarium. During a residence of nearly two years in one of the largest of our state hospitals, over one-half of the time on the receiving service, I observed but few of these cardio-mental cases. The obvious deduction is that such cases, as suggested in the beginning of this paper, are usually treated by the internist and not by the alienist, and I am sure that, as a result, the psychic side has been minimized. I do not regard any of these cases as unusual, rather believing them typical examples of comparatively common disease forms, and I desire only to recall your attention to them as being almost as much within the province of the psychiatrist as the internist, and to commend them for closer observation than the literature indicates they have received.

DEFECTS OF WILL FROM A MEDICAL STANDPOINT.*

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At first my subject may seem too intangible to be of importance in practical medicine; but one has only to think of his cases of alcoholism to realize that complete recovery or absolute ruin may be determined by the operation of the patient's will. Analogous cases in which a morbid appetite needs control at once suggest themselves, and when we further recall the many disturbances of voluntary action from which hysteric and neurasthenic patients may suffer the great importance of the subject is manifest. But, granting the desirability of remedying defects of will, some may ask whether we have any definite knowledge of the nature of volition and of its defects, such as a physician can utilize in the actual treatment of patients. I am convinced that there is a great and growing fund of such knowledge which, if carefully considered by any physician, will help him to be a better therapeutist.

The will, of course, is not to be regarded as a mysterious metaphysical entity, or even as a faculty, but as a cerebral process, accompanied, it is true, by consciousness, but nevertheless a nervous mechanism whose operation is modified by various conditions in health and often very seriously deranged by disease. Recent knowledge of the localization of motor, sensory and psychic functions in the cortex makes it possible to form a fairly definite and highly probable hypothesis as to what the mechanism of volition is and to deduce from it important clinical precepts.

The essential effect of willing is to cause motion, and when we inspect our own minds we find that a voluntary motion is always preceded by the idea of the motion. Now, ideas have definite locations in the sensory centers of the cortex, each according to its kind, ideas of form and color in the visual centers, of sound in the auditory centers, and so on, and each idea is the memory of a sensation. The ideas of motion are located in the kinesthetic centers in the posterior part of the Rolandic region and are memories of the sensations caused by motion. The memory or idea of any particular motion is the cause of that motion being repeated.

Suppose, for example, that one sees an orange on the table and picks it up. Something like the following must occur in the brain: Nerve currents, starting from the eyes, reach the visual center (V, Fig. 1), and these

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arouse sensations of form and color, which, in association with certain ideas of distance, solidity, weight, etc., constitute the visual perception of the orange. Association impulses then pass from the visual center to the kinesthetic center for the right hand (K), arousing in it the memory of past sensations caused by the motion of grasping a similar object. If the idea of this motion is strong and vivid, that center (K) is correspondingly excited and sends association currents forward to the motor centers (M), and these centers, becoming active, send currents down through the pyramidal fibers which cause the muscles to contract. I say something like this must happen, for the sketch, of course, is far simpler than the reality, and the processes of association, which I have represented as direct, are probably roundabout by way of the higher centers of Hughlings Jackson or the association centers of Flechsig. Flechsig thinks that the prefrontal and parts of the parietal and temporal regions of the cortex are central stations which connect the motor and sensory centers somewhat as a telephone central connects the scattered subscribers; hence, he has called them association centers.

Jackson's earlier theory of a higher representation of motions and sensations and Flechsig's seem to me to be in essential harmony with each other and with the facts

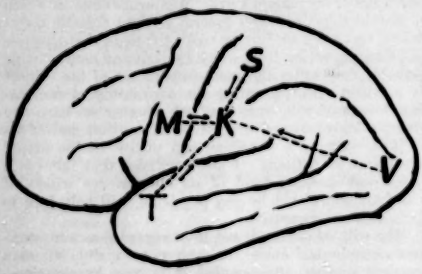

Figure 1.

indicating that the prefrontal lobes are essential to the higher mental operations. They are also in harmony with the theory of a concept center in the temporal lobe, as held by Dr. Mills. Nevertheless, for the sake of clearness, we may provisionally represent association impulses as passing directly from one center to another.

We see, then, that voluntary motion is ideomotor action and is brought about by a chain of cortical reflexes; that activity of the kinesthetic center is essential and results, on the side of consciousness, in the idea of the motion to be performed, and, on the physical side, in the excitation of the appropriate motor centers.

Other reflexes are subject to both acceleration and restraint, and so it is with volition. Suppose that perception of the orange revives in the center (which we will call T) the memory of its aspect, agreeable to taste. Then the idea of grasping it is strengthened by accelerating impulses passing from T to the kinesthetic center (K) and the motion is made more prompt and certain. Suppose, on the other hand, that the sight of the fruit revives the memory of colic. The center for abdominal pain (which we may represent as S) then sends inhibiting impulses to K, which weaken the idea of grasping, and perhaps S may also excite in the adjacent center K' the idea of withdrawing the hand, so that two opposing motions are begun in the muscles. When both accelerating and inhibiting impulses thus act on the kinesthetic center at the same time or in rapid alteration, their joint result is arrested action of indecision until one or the other finally predominates.

The action of this volitional reflex and the effect of its accelerating and restraining impulses is subject to many modifications, depending principally on habit, instinct, emotional state and stage of mental development.

Habitual acts are more readily caused by the exciting idea than others and are harder to restrain, because the nervous paths have been facilitated. Instinctive acts occur even more readily, because they have been habitual in the race and the brain paths are especially prepared for them at birth.

Certain emotions, such as joy and anger, set the ideomotor regions of the cortex in a quiver of excitement and favor immediate action in response to ideas, with no time for restraining impulses to interfere. We see extreme illustrations of this state in certain stages of intoxication by alcohol or ether and in an attack of acute mania. Grief and despondency, on the other hand, weaken the ideomotor regions and favor all restraining impulses, so their tendency is to indecision or absolute inaction. The extreme illustration of this state is found in melancholia, more particularly in melancholia attonita. The effect of fear varies: ordinary ideomotor action is depressed by it so that we can say one is paralyzed by fear, but the instinctive motions of defense or escape may be enormously accelerated by it, as may well be seen in melancholia agitata and the active phase of alcoholic insanity.

In immature minds the ideas necessary to the execution of complex and difficult actions and those necessary for the restraint of simple and instinctive actions are weak or absent.

From this statement of fact and theory a rule may be deduced which has a great many practical applications. The idea of an action tends at once to cause it; think strongly of a certain word and you will find your tongue stirring to utter it, of a blow and you will find your fist clenching. If the action is desirable, first make the idea of it as definite and vigorous as possible and then favor its effect on the motor centers by accelerating ideas and by raising the emotional tone. If the action is undesirable try to prevent the idea of it from occurring at all, and only as a second choice rely on restraining ideas or depressing emotions.

All prohibitions of specific acts have the disadvantage that they must first awaken the idea of the act and so tend to cause it. Restraining impulses may come into play, but the mechanism is started and they may be too feeble or too late to arrest it. Better incite to doing what will exclude the wrong. The reformed alcoholic or drug habitué or young man trying to avoid sexual errors should not keep repeating vows or assurances that he will not offend again. A wise physician will often make light of his patient's past sins in order that forgetting them he may "press forward toward the mark of his high calling." Rewards are far more efficient than punishments; they fix attention on what is desirable and at the same time raise the emotional tone. They have an especially important place in the treatment of nervous children. Give a child a reward for speaking correctly, for sleeping soundly, for having a nice, dry bed, for easy and graceful motions, and it will succeed vastly better than punishment for failures.

The treatment of hysterical paralysis is a most interesting application of the general rule we have deduced.

We remember the admirable epigram: "She says, 'I can not;' it looks like, 'I will not;' but it is 'I can not will.'" Now, if we inquire in what respect the will is defective we come on the great fact that the paralyzed limb is always more or less anesthetic to touch, pain and temperature, and more particularly to kinesthetic impressions. There is convincing proof that this loss of sensibility is cortical; the sensory center K, while not organically damaged, has been so depressed that it is no longer sufficiently excited by the sensory currents coming up from the affected muscles and joints. Still less is it excited by association currents from other cortical centers; the patient can not revive the idea of the motion; an essential part of the process of volition is absent. It is inexcusably coarse work simply to tell such a patient that the paralysis is hysterical and that she could move the limb properly if she only wanted to. She feels that this is not true, and it really is not.

After such a thorough examination as will in itself inspire confidence we should proceed, according to a definite plan, first to raise the emotional tone by a highly favorable prognosis; then to excite the depressed sensory centers by electrical stimulation and passive motion of the affected limb; then to further awaken the lost idea of motion by encouraging the patient to aid rhythmical passive motions by voluntary effort. Often there are inhibiting ideas of pain or danger that will arrest the desired motion, as we will know by seeing the opposing muscles contract; these ideas may be dispelled by repeated assurances and other appropriate methods. The one fundamental thing is to reawaken the lost sensations and ideas in the kinesthetic center.

Of the opposite hysterical phenomenon, spasm, I shall not speak further than to say that the general spasms and some of the localized ones are not voluntary motions, but instinctive reactions constituting part of an emotional process. They may, however, be counteracted by strictly voluntary motions which tend to exclude them, as well as by rational attempts to improve the emotional state. Some of the localized spasms are voluntary, although not desired by the patient, inasmuch as they depend on a fixed idea of the abnormal posture and are to be corrected by dispelling the idea.[1]

In strictly neurasthenic states, although we never see such paralyses or spasms as are common in hysteria, the disagreeable sensations and the limitation of spontaneous mental action, due to exhaustion, lead to several distinct forms of deranged volition.

(1) Ordinary duties become excessively difficult, because the normal pleasurable sensations attending mental work have been banished by fatigue and in their place unpleasant feelings have become associated and exert an inhibiting effect. Williams James gives a vivid account of how a college professor will pass the forenoon doing a multitude of trivial things, "anything rather than do the one thing he ought to do, prepare for a lecture on formal logic, which he hates." The remedy for this state is rest, especially from the distasteful work, together with measures to invigorate the nervous system generally.

(2) Actions of various kinds become associated, perhaps accidentally, with a definite, although utterly irrational feeling of fear, which inhibits the action. Thus a tired neurasthenic will often walk a long distance, seeing himself passed by car after car, each of which he thinks of boarding, but does not do so on account of fear. One of my patients, secretary of an insurance company, is often unable to sign policies in the presence of the clerk who is waiting for them. He has a feeling like that of stage fright, his hand trembles and he makes a specious excuse. Alone he does much better, but is still troubled. Similar cases could be multiplied indefinitely. The treatment of such a condition, in addition to those measures favoring rest and recuperation which are generally required in neurasthenia, should include special means of securing emotional tranquillity and repeated encouragement to attempt graduated exercises in doing those things that have become associated with morbid fear.

I have already considered this at some length in a paper read at the New Orleans session.[2]

(3) In some cases the weakening of spontaneous cortical activity and the tendency toward unpleasant feelings and ideas cause the accelerating and inhibiting impulses of an every-day action to be so evenly balanced that indecision is indefinitely prolonged. Thus a neurasthenic will start out to get his breakfast which he very much needs, but can not choose the restaurant, some trivial objection to each, in turn, being sufficient inhibition, although the idea of getting breakfast can not be dismissed.

(4) The weakening of spontaneous mental activity explains another form of defect in which the patient feels an impulse to do unimportant and useless things, such as counting, touching posts or other objects, jostling a stranger in the street, etc. In a healthy brain such ideas, no doubt, occur from time to time, but are immediately crowded out by other interests. In the neurasthenic the idea of the action has the center of the field of consciousness, and no other has sufficient vigor to crowd it out. As long as it remains without the motion being performed there is a feeling of unrest and distress; once the action is performed there is relief, and the brain is free to act in some other way. The familiar case of Dr. Samuel Johnson going back to touch the post he had passed is an illustration. The remedy for such defects of will is not to tell the patient, what he already knows, that the impulse is irrational, but to cure the neurasthenia and especially to restore the normal spontaneity and tone of feeling. As to the impulses themselves, they are generally to be resisted by an attempt to become interested in other things, but the patient must not be too strenuous in his resistance; excessive struggles not only lead to exhaustion, but fix the intruding idea more immovably than ever in the exhausted cortex. Where no grave question of conduct is involved, it may be better to yield and forget. Oscar Wilde's scandalous saying that the only thing to do with a temptation is to yield to it at once and so deprive it of its power of torment was, no doubt, suggested by the distress attending this form of arrested volition. One of my patients, a very intelligent lady, once had an impulse to stop and count all the objects in a jeweler's window, but was determined not to be so foolish and walked on. The window was in her mind all day, and late in the evening, restless and unhappy, she concluded that there could be no peace of mind for her until she went back to the window and counted, which she did, at great inconvenience to herself and her husband.

(5) The last form of disturbance of will in neurasthenia is typified in such a case as this: A father sees his child and a carving knife at the same time, and the

1. Pershing: Hysterical Movements, Journal A. M. A., Feb. 11, 1905.

2. Pershing: The Treatment of Emotional Disturbances. Journal A. M. A., Jan. 30, 1904.

thought comes, "What if I should cut my child's throat?" No doubt, equally perverse thoughts come to healthy persons, but they are not taken seriously and are quickly displaced by the flood of normal mental activities and so forgotten. But in the irritably weak brain there is an excessive emotional reaction; the patient feels his heart bound and then stop, he trembles and is bathed in sweat. He has the sensations of fear and, as he interprets it, he is afraid that he may murder his child. The intensity of his horror fixes the incident in his memory; the same idea is recalled again and again until everything seems to be associated with it. The patient feels that the idea of the action tends to cause it and has no confidence in the restraining influences. Such cases are extremely difficult to treat successfully and will generally tax all the resources of the most skillful neurologist. The important elements of treatment, in my opinion, are (a) the thorough mental and physical examination that will prevent the physician from mistaking melancholia or any other disease for neurasthenia and at the same time make the patient feel that his case is understood; (b) positive assurance that the dreaded act can not be committed; (c) general measures toward the cure of neurasthenia, especially rest, food, tonics, cultivation of normal interests, perhaps change of scene; (d) the skillful use of opium in order to secure emotional rest, with all possible precautions in view of the danger of a habit.

It is evident that what has been outlined in this article might be greatly amplified and also that much not touched on might have been included, but I think enough has been said to show that the modern psychophysiologic theory of volition has important applications in practical medicine.

DISCUSSION.

DR. D. R. BROWER, Chicago, said that the relation of the will in these mental cases has always been a matter of very great consideration to him. He thinks that the great majority of mental cases begin in will disturbances, and that the failure to recognize this beginning is one reason for the want of success in the treatment. After the case has progressed for a time the will defects are overwhelmed by the emotional defects. He agreed with Dr. Pershing as to the correction, so far as practicable, of these defects. Dr. Brower's experience, like Dr. Pershing's, has been that opium given so that the patients do not know they are taking it is one of the best agents in giving tone to this apparent defect, provided the opium is properly guarded by other agents to prevent interference with the important function of elimination. Dr. Brower is quite sure that in the past he has overlooked the beginning of many cases, because he has failed thoroughly and carefully to consider the importance of this matter.

DR. H. A. TOMLINSON, St. Peter, Minn., said that probably inadvertently Dr. Pershing failed to refer to that portion of the cerebral cortex that is anterior to the precentral fissure, the center for general inhibition. It is both interesting and instructive in studying the comparative physiology of the nervous system, and especially the evolution of its functions, to note that the primary function of the nervous system is motor; that is, the generation of motor impulses in response to the afferent stimuli resulting from the irritability of the dermal layer of cells. Also that these impulses have for their object the approximation of the animal to food substances, or the avoidance of obvious sources of danger. As the number of animals in a given area becomes greater, the sources of danger more numerous and less easily avoided, and the competition more keen, the necessity for an inhibitory or dirigent apparatus arises; which is identical with what we call the volitional function in the higher animals. Passing from this primitive association of functions, and ignoring the primary function of reproduction, to the complex functional arrangement and association in the human nervous system, there is evident an enormous elaboration of these simple processes, with their correlations in the different cortical areas in the central portion of the cortex, which Dr. Pershing calls the kinesthetic centers, into which stimuli are received, and from which motor impulses are transmitted, and which the environment of the human being has made necessary. The great complexity of the environment, however, makes necessary another functional area, which has to do with the relation of impressions from without; the inhibition and direction of the resulting afferent impulses. This is the process of volition, and, so far as we know, this function resides in the cortex of the frontal lobes, anterior to the precentral fissure. The association and continuity of the cortex of the second and third frontal convolutions with the ascending frontal; and the association of these convolutions with the operculum, inferior parietal lobule, and the anterior portions of the first and second temporal convolutions, shows how the function of inhibition is intimately connected with the higher activities, and dominates those impulses that control the relations of the individual with his environment. There is negative proof of this relation in the progress of the processes of cortical degeneration, which begins first in the frontal lobes, then the areas referred to above, and next the paracentral lobule and the angular gyrus. In cases of defective development, too, it is in the area of the prefrontal lobes that the deficiency is most marked, and the reversion in type most conspicuous. Just in proportion as these parts of the brain cortex are lacking in development, or are degenerated, will the changes described by Dr. Pershing be apparent. Now in order to get a definite idea of the pathology of these conditions, where no gross lesion exists, we must study the circulation in the cortex, especially the lymph and venous circulations, and their influence in the production of autointoxication. It is an interesting hypothesis that circulatory disturbances following autointoxication result in the breaking up of the normal relation of impressions, and that the consequent futile activity of the kinesthetic centers brings about extreme fatigue of the cortical cell, therefore imperfect reconstitution, and the subsequent neurasthenia that shows itself in volitional aberration.

DR. G. R. CLARK, Dearborn, Mont., called attention to the fact that in the insanity of adolescence many of the patients exhibit peculiarities, for example, an impulse to touch certain things, or to go upstairs backward. This only occurs at times, but it is one of the characteristic signs of the disease. Such a patient may be sufficiently cured to pass out into the world again, but during the course of the disease his mind has acquired a sort of mental habit for the reproduction of that particular mannerism. The clearing up of the symptoms is remarkable, but after a few months or years of the old associations and the old manner of thinking the mannerisms will return. Dementia præcox may be secondary to certain vasomotor conditions; the nervous system may have lost its power of stability. When these patients are 50 years old or more they are likely to acquire new mannerisms, and anything which tends to destroy the physical health to a certain extent brings back this old tissue instability. Dr. Clark referred to a certain form of dementia præcox seen in school children in which the child is supposed to be only dull and stupid, he is punished for a condition for which he is not responsible.

DR. J. ALLEN GILBERT, Portland, expressed his disappointment that Dr. Pershing did not take up the subject of the will more as the will. It is a psychologic subject through and through, and the more Dr. Gilbert studies the more he is convinced that any arbitrary division or classification of psychic functions will lead us into trouble. Neurologists forget at times, he said, that there is no emotion without will and no will without intellect, and no intelligence without emotion and *vice versa*. In other words, psychic activity, as such, is unitary. The more he studies physiologic psychology the more he is convinced that it is utterly impossible to use any classification which bases physiologic psychology strictly and solely on a material basis. He referred to Ziehen's "Physiological Psychology" as a work most heavily laden with inconsistencies and contradictions. Haeckel's "Riddle of the Universe," by which so many physicians swear, he considered likewise overburdened with self-contradictions. Professor James, who might be considered the father of the theory of emotions based on material processes, has retracted his own theory as erroneous and untrue to the facts. Dr. Gil-

bert is as yet unwilling to admit that psychology has no place other than as a corollary to physics.

Dr. H. T. Pershing said that of course he realized that in bringing up such a subject he was opening up an enormous field where one might easily go astray. He was forced by time limitations to give only the barest details of the subject and there were many things which he had to omit entirely. Many of those perversions of the will are the reversions to the primitive type of the child; thus Dr. Johnson touched his post as he went along, just as the boy at certain intervals kicks at everything he passes. In reply to another criticism Dr. Pershing said that the nature of consciousness is a subject on which he is always willing to talk, but it is a subject that can hardly be included in a discussion on medicine. Consciousness does exist and it is interfered with in disease of the brain; and the effect of disease on the consciousness varies according to the location of the lesion in the brain. Therefore, whatever the metaphysical implications one can not fail to see the practical relations of these facts. He said that the assumption that the mind is a unity seems to him false; the mind is as complex as the brain, and very far from being a unity. Dr. Pershing would deny the assertion that there can be no operation of the will without operation of the intellect. He was surprised to hear that Professor James has gone back on his theory of the emotions, but even if he has, Dr. Pershing will believe that the theory is well sustained. It does not depend on James alone, but on Lange and other psychologists as well. James, however, gave it a particularly happy expression in his text-books on psychology.

Dr. J. H. McBride, Pasadena, Cal., declared the mentality of the patient and the physical environment are vital matters. Medical men have not given this subject the attention it deserves. In all forms of nervous diseases, the mental influences that are brought to bear on the patient are important, or may be important elements in the treatment. So far as the will is concerned, he is inclined to shy at it. The discussion of it furnishes a certain amount of mental gymnastic, but he is not certain that we are further benefited. Huxley, who was fond of psychologic subjects, said that when, in his discussions, he got to the will, he always quit.

A STUDY OF PERFORATION IN TYPHOID FEVER.*

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This subject is of interest to every physician and surgeon on account of the great prevalence of typhoid fever as a disease and the apparent unavoidable frequency with which this extremely fatal complication of intestinal perforation occurs.

It has been estimated by Briggs that more than 16,000 perforations of the intestines due to typhoid fever occur annually in the United States alone. I am inclined to think this statement rather too high, however. From some carefully prepared statistics made by my colleague, Dr. J. Alison Scott, in reference to the frequency of this disease in the United States during the year 1900, based on the United States Census Report, he found that 35,379 persons succumbed to the disease. From the analysis of autopsies of 10 large hospitals it would appear that one death in every four was due to intestinal perforation. Assuming, therefore, that one death out of every four is due to perforation, 8,844 perforative cases occurred throughout the entire country in the year 1900. Assuming that the mortality of all the operative cases is 75 per cent., timely operation in these 8,844 cases might have yielded 2,211 recoveries. These are important figures and mean the loss or saving of many lives.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

CAUSES.

The causes of perforation are numerous. Among them may be mentioned race, sex, age, season, geographical location, stage of the disease, severity of the attack, intestinal parasites, etc.

Race.—It would appear that the white race is more disposed to perforation than the negro race, but this is a questionable statement as a larger percentage of cases occur among the white race, and consequently more perforations are found in them.

Sex.—The male sex is more liable to suffer perforation than is the female, the ratio being about 4 to 1. Fitz collected 100 cases of perforation in which 71 of the patients were males.

Age.—Typhoid fever is as a rule a disease of youth or early adult life and therefore the largest percentage of perforations will naturally be found at what is considered an early age. In 279 cases where the age was known over 12 per cent. occurred in patients under 15 years of age; 54 per cent. occurred between 15 and 30 years of age, and 33 per cent. occurred in patients over 30 years of age. Two of my own cases operated on were children under 12 years of age.

Season and Geographical Location.—These are not important factors. In the summer season more perforations occur simply because typhoid fever is apt to be more prevalent at that time of year. The majority of my own cases, however, occurred between the months of February and June.

Stages of Disease.—It would appear from a careful analysis of a large number of cases that the third week in the disease is the most usual time for perforation. It may occur, however, at any time during the height of the disease, as pointed out by Dr. Osler; it may have occurred before the patient feels at all sick, as has been noticed in a number of ambulatory cases operated on; it may occur during convalescence, when every danger of the disease is supposed to have passed.

Severity of the Attack.—There is no doubt that certain epidemics of typhoid fever are more virulent in character than others; the invasion of the Peyer's patches in such cases seems to be much deeper and more extensive, and perforation is much more likely to occur than in the cases of milder type.

Intestinal Parasites and Exciting Causes.—Intestinal parasites may be a predisposing cause and even rarely an exciting cause to perforation. Many of the earlier reported cases of perforation in the stomach were due to intestinal worms, and it seems possible that these parasites may be an exciting cause to typhoid perforation. Virulent cocci or bacilli may produce a secondary infection, resulting in inflammation and necrosis. A severe inflammatory process of an ulcer thus infected may lead to perforation. The exciting causes of typhoid perforation are, however, generally mechanical. Anything which sets up an unusual peristaltic action is likely to cause solution of the continuity of the already diseased intestines; undue or involuntary contraction of the abdominal muscles, straining at stools or urination, sudden spasm, cough, the struggle or spasm incident to a cold bath, should all be mentioned in this connection. There is no doubt that irritating particles of food, for instance, apples and other articles brought to the patients by their friends, should be classed as exciting causes. When, however, perforation occurs while the patient is sleeping, and without exciting cause, it is generally supposed to be due to excessive necrosis.

PATHOLOGY.

The pathologic lesions in typhoid fever are especially prominent in the last three feet of the ileum, although extensive lesions may also be found through the colon even down to the sigmoid, as was noticed in a case operated on at the Pennsylvania Hospital. In the beginning there is a congested condition of the mucosa and follicles of the lower ileum. The accumulation of cells in the lymph tissue may be so extensive that the adjacent mucosa becomes infiltrated, and the blood vessels becoming more or less compressed cause the follicles to assume a white or anemic appearance. There may be an appreciable round-celled infiltration. If the so-called medullary infiltration does not result, coagulation necrosis becomes discharged in the bowel. The process is aided by the direct action of typhoid toxins and also by the ischemia produced by the choking of the vascular channels and partly by the direct action of the typhoid toxins. Recently these toxins have been regarded as agents producing the agglutination or thrombosis of the erythrocytes in typhoid. The thrombosis predisposes to sloughing. When the medullary infiltration involves the entire thickness of the bowel it is evident that a perforation will occur when the necrotic area is separated. The sloughing may involve only the mucosa, or, as is more common, the tissues down to the muscularis. The slough is cast off about the end of the second or beginning of the third week of the disease. Separation begins at the end of the necrosed area, but it is rare to find an entire Peyer's patch that is completely sloughed away, or to find a perfectly ovoid ulcer directly opposite the mesenteric attachment. When the ulcer fails to heal and gradually deepens as it approaches the peritoneal coat, it may induce more or less plastic peritonitis which, when found on the surface of the bowel, is always suspicious of an incipient perforation. After its removal a small opening into the bowel can be detected, varying in size from the point of a pin to the size of a lima bean. Nature not infrequently attempts to close these openings by the wall of the bowel agglutinating itself to another portion of the bowel or by a tag of omentum which has become adherent around the opening. A specimen in the Pennsylvania Hospital Museum shows perfectly where a typhoid perforation was closed by this means, the patient dying of a subsequent illness.

If the process be not arrested at this point, an abscess will form; and cases have been reported in which an abscess was not opened for two or three months subsequently, the patients ultimately recovering. If, however, no adhesions form, then perforation into the free peritoneal cavity takes place, and general peritonitis results. Even in cases of perforation arising after this manner, the size of the bowel opening may be great, or several small perforations may form in the floor of the same ulcer. At times it almost seems as if the stage of medullary infiltration persisted throughout the disease, since in cases of perforation from ulceration the surrounding parts of the perforated Peyer's patch sometimes are so thickened and friable that it becomes impossible to make sutures hold; whereas, at other times the bowel has become so thinned by extensive ulcers that it appears like paper. At times, too, it is impossible to tell whether the perforation has arisen from sloughing or from progressive ulceration.

As to the form of the perforation, the larger circular lesions are, as has been stated above, generally due to sloughing; the smaller, or cribriform, to ulceration; and the oblong, slit-like perforations have been thought to be due to traumatism.

The perforation is usually situated on the part of the bowel diametrically opposite to the mesenteric attachment, where the lymph glands of the intestine are found and where the blood supply is poorest. Occasionally, however, an ulcer will perforate between the layers of the mesentery and a retroperitoneal abscess will be formed. Such a lesion may be mistaken for a suppurating mesenteric gland.

In 190 cases in which the site of perforation is mentioned, it was found within 12 inches of the cecum in 140, or 73 per cent.; and in only 4 cases, or 2.1 per cent. was it more than three feet distant from the ileocecal valve. In seven cases only was the colon perforated, five times the ascending colon, once each the transverse colon and the sigmoid flexure. Meckel's diverticulum was perforated three times, and the appendix eight times.

BACTERIOLOGY.

With regard to the bacteriology, it has been found that in cases where the typhoid bacillus alone is the infecting cause, the usual lesions are a low-grade peritonitis, frequently lemon-colored exudation, few adhesions, and not much lymph. Where the streptococci or the staphylococci abound the lymph is more abundant, and adhesions are the rule if the peritonitis has lasted more than a few hours. The prognosis is much more grave in the streptococcic infection than in the typhoid.

SYMPTOMS AND DIAGNOSIS.

In what may be called a typical case, the symptoms are well marked and easily distinguished, but unfortunately such a case is the exception. It is well known, however, that not infrequently a case may present all the clinical evidences of perforation, submit to operation and no intraperitoneal irritation whatever be found. On the other hand, patients may die without any abdominal symptoms of importance, and at autopsy a perforation may be found. Nevertheless, there are certain classical symptoms which must be carefully borne in mind and which must be thoroughly analyzed in every case of suspected perforation, for without doing this errors will be made in the diagnosis.

Pain.—Pain is a very frequent and common symptom of perforation in typhoid fever. It is usually of a stabbing character, situated most frequently in the lower right quadrant of the abdomen, but is also sometimes felt in the epigastrium and umbilical region, not unusually in the bladder, and, in the male, at the end of the penis. These facts should not be overlooked in patients who are apathetic or who are so far advanced in the typhoid disease that they feel no pain. Thus, it often happens that the first evidence of perforation is a distended abdomen with movable dullness in the flanks. The pain of perforation is usually severe and sometimes will last for a while and then disappear without any apparent reason, but as a rule it is a constant symptom throughout the onset of the perforation. I recall a case where the first sign of perforation was a violent attack of pain, causing the patient to scream out and draw his legs up in bed. This lasted for but a short time and then entirely disappeared, so that this symptom was entirely absent later on, leaving only a muscular rigidity on which to base the diagnosis. On the other hand, it must be borne in mind that pain is such a constant and varying thing during a typhoidal attack, due to ingestion of imperfectly digested food,

flatulence, or to a dozen and one causes of irritation within the lumen of the gut, that this symptom must always be carefully guarded.

The greatest care must be exercised in patients who are suffering from pleural irritation. A short time ago I saw a case where violent pain and muscular rigidity were dependent upon a diaphragmatic pleurisy. It was with some difficulty that this condition was isolated, but when treated by straps all pain and symptoms subsided in a short time. The muscular rigidity incident to the pain was very marked and deceiving. I recall two other cases, one in which there was violent pain, collapse, sweating, and all the symptoms of a perforation, caused by the sudden passage of a renal calculus. In the other the patient was a negro suffering from an acute pleural pneumonia. He had all the symptoms of perforation, but it was thought that these were caused by the pleural condition. Later, however, operation was decided on and revealed a perforation in the intestine, which had been the original cause of the symptoms, not the pleural condition as was supposed. This mistake resulted in a great loss of time, which, of course, materially influenced the prognosis. Therefore, I emphasize the fact that the greatest care must be exercised in regard to this very important symptom of pain.

Sweating.—Either alone or accompanied by the pain of perforation, and followed by a fall in temperature, sweating is in itself always a significant fact. The sweating may be profuse, involving the whole body, but is more often confined to the head and neck. The fall in temperature is a question over which much discussion has arisen. In my experience I regard it as a most valuable sign, and where it has not been recognized, I believe it is simply due to lack of careful observation on the part of the nurse or attendants. Therefore, all cases of temperature should be carefully recorded from time to time, and any variation, especially a fall, should be a source of warning and the medical attendant should at once be notified. A fall in temperature is, of course, a very frequent accompaniment of intestinal hemorrhage during typhoid fever, but the hemorrhage as a rule is painless and is usually evident in the stools in the course of an hour or so.

Vomiting.—This so frequently occurs in severe cases of typhoid fever without any exciting or apparent cause, that it can not alone be considered indicative of perforation, but where it occurs for the first time and especially where it either precedes or follows pain, it should not be lightly passed by. If at all violent in itself it may cause a perforation, and in many instances follows it.

Rigidity.—Rigidity of the abdominal muscles is the most valuable of all signs in the diagnosis of intestinal perforation. This is a rigidity which is reflex, and hence involuntary, and depends for its production on the overflow of stimulus received from the lumbar cord from the inflamed peritoneum and is usually observed in the right rectus and oblique muscles of the abdomen, although it may extend over the entire abdominal surface. Voluntary rigidity of the abdominal muscles is often present in typhoid fever, due to the endeavor of the patient to protect the sore and swollen intestines from pressure and unnecessary manipulation on the part of the attending physician or surgeon. I would say here that the sense of rigidity, which is conveyed to the hand of the examiner, is of varying quality, depending on the examiner's delicate sense of touch, and what may be regarded by one as distinct rigidity may be regarded by another as unappreciable. I do not think that all physicians realize what is meant by a surgeon as abdominal rigidity. Some will press the fingers deep into the patient's abdomen, as though they were attempting to palpate the lumbar spine, and then declare they can not detect any rigidity, whereas the skillful examiner, who is endowed with this valuable gift, *tactus eruditis*, will detect—seemingly by a mere touch of the finger tips—the slightest rigidity which may be present, and which may have escaped the grosser sense of touch of the less skillful examiner.

Tenderness.—Tenderness is by no means so valuable a sign as rigidity, for not only may tenderness exist where no perforation is present, a fact which every physician of experience well knows, but it may also be absent when perforation does exist, as was exemplified in the last case on which I operated. The explanation of this may be found in the apathetic state of the patient, the typhoid toxins having entirely benumbed his sensibilities.

Pulse Rate.—Along with the cardinal symptoms which have just been mentioned, namely, pain, rigidity and tenderness, there is, in the vast majority of cases, an increase in the pulse rate. The usual pulse rate in typhoid fever ranges from 80 to 100 beats per minute, but after perforation this pulse rate usually rises rapidly from 120 to 140 in a surprisingly short space of time, often within 10 or 15 minutes after the onset of the pain.

Countenance.—The change in the facial expression, which follows intestinal perforation, is most important. Almost at the very moment of perforation there is a distinct change of expression difficult to describe, but yet easily recognized when once seen. It is not the peritonitic facies which closely approaches the Hippocratic in type, but is distinctly characteristic of the shock of perforation. It is what the French call an "abatement" of the countenance, consisting in a general weakening of the expression.

Dullness on Percussion.—This is a very uncertain sign, and palpation of the liver dullness on which so much reliance was placed in former years is even more elusive. Mere intestinal distension frequently produces palpation of the hepatic dullness, and even when air is free within the peritoneal cavity the liver dullness may persist. Dullness in the flanks can not be considered as pathognomonic of fecal extravasation, since when the colon is freely movable liquid feces within it may give rise to a similar condition.

Examination of the Blood.—This procedure, which has been so frequently discussed, is very deceiving. In the last two cases operated on at the Pennsylvania Hospital the leucocyte count was only 5,000, and it would, therefore, seem in these cases as though the patient's exhausted condition prevented a leucocytosis. During typhoid fever the number of leucocytes is physiologically diminished, and although an extremely high leucocytosis may render positive the diagnosis of perforation, a low count should under no circumstances be interpreted as showing that no perforation exists, since the patient in the latter case may be completely overwhelmed by the typhoid toxins and no leucocytic reaction be possible. Kast and Gutig have recently shown in typhoid fever complicated by secondary infections, that the leucocyte count is much lower than in such infections which occurred alone and not as a complication of typhoid fever. Observations made by Longcope on the bone marrow in cases of typhoid fever have shown

that when the disease is complicated by a severe secondary infection there appears to be an actual inhibition of the formation of polymorphonuclear leucocytes in the bone marrow. A wave of leucocytes has been described as reaching its maximum soon after perforation, then subsiding. A differential count has been claimed by some to be more reliable than a mere enumeration of the white cells, as a rule, as in commencing peritonitis there is a disproportionate increase in the polynuclear neutrophiles. Therefore, in drawing conclusions from any leucocyte count in typhoid fever, the normal leucopenia of this disease should be borne in mind.

Crile's observations on the increase of the blood pressure at the onset of peritonitis is an interesting one. This, however, I think has been long recognized as a clinical fact, but I have had no opportunity to employ this method of diagnosis in any of my cases.

DIFFERENTIAL DIAGNOSIS.

From what has previously been stated, it would appear that in a typical case of typhoid perforation, little difficulty would be experienced in making an accurate diagnosis. It so often happens, however, that the surgeon is called to see a case in consultation with the physician, and they see the case possibly for the first time and where it is impossible to obtain a satisfactory history. In this class of cases much difficulty has been experienced in elucidating what are the real factors to depend on in making an accurate diagnosis.

Monroe has expressed himself as having had difficulty in making a positive diagnosis where hemorrhage was concerned, finding it difficult to determine whether the true condition was responsible for many of the symptoms that present themselves. The collapse is likely to be the same in either case; yet hemorrhage is, as a rule, not attended with pain and absence of rigidity. The escape of blood from the bowel will soon determine the cause of the trouble. However, in one of my own cases both conditions existed, as was proven by laparotomy, the bleeding point ligated and the perforation in the bowel closed after the establishment of an artificial anus.

From appendicitis it may be impossible to make a positive differential diagnosis. In the latter, however, the pain is, as a rule, not so severe and the temperature shows no sudden drop, the pulse not so rapid and the faces not so strikingly changed, and there is also usually a history of previous attacks. In all cases, however, operation is indicated.

Peritonitis due to pelvic or ovarian disease can usually be eliminated by the history and a careful vaginal examination.

Affections of the gall bladder occur often during typhoid fever from infection of the typhoid bacilli finding its way into the gall bladder. This condition is not uncommon.

The pain in the region of the gall bladder, sometimes jaundice, without a fall of temperature, little shock, and the physical signs of tenderness, pain, rigidity and dullness, with a possible palpable mass in the region of the gall bladder, all aid in determining the character of the invasion.

Gastric and duodenal ulcers may perforate during an attack of typhoid fever. The local signs here are our chief aid in diagnosis, which will point to a perforation, with all the rapidly accompanying signs of interperitoneal irritation simulating a ruptured typhoid ulcer.

Iliac thrombo-phlebitis, with pain and swelling in the groin and along the course of the vein, will aid the careful observer in determining the character of the pain, as not that of perforation.

Suppurating mesentery glands or splenic infarcts may give rise to peritonitis during the course of this disease, and the symptoms are those of peritonitis pure and simple, and are not characteristic of typhoid perforation. When pain exists, the greatest care must be exercised to determine its origin if possible. The last two cases I saw presented all the typical signs of perforation, namely, intense pain, rigidity, with a hard, muscular abdomen and with a slightly anxious expression. Owing to the hard muscular abdomen the bladder could not be palpated; otherwise urine was passed with a fair degree of regularity every few hours, and a tentative diagnosis of perforation was made and permission for operation obtained, when, as if by magic, on the removal of 188 ounces of urine by catheter prior to operation, all the symptoms of typhoid perforation immediately subsided and all symptoms of interperitoneal irritation also disappeared. In the second case, all the symptoms were equally prominent and it was with difficulty that a diaphragmatic pleurisy was determined, but with the fixation of the side, etc., soon all the symptoms which were so characteristic of perforation disappeared.

PROGNOSIS.

The prognosis of intestinal perforation in typhoid fever is exceedingly grave, although there is no doubt that occasionally patients will recover where a perforation takes place in some quiet nook in the abdomen where nature closes it with a fold of omentum which rapidly seals in the offending perforation, thus permitting the case to go on to a favorable termination. This is proven by a specimen which is now in the museum of the Pennsylvania Hospital of a patient who died of some subsequent disease.

But recovery without operation is exceedingly rare and is hardly worth considering. Among 567 operations for typhoid perforation, to which I have reference, about 24 per cent. left the surgeon's hands well, leaving a mortality of 76 per cent. If from this number we were to exclude many cases in which the patient had really recovered from the operation, but died some weeks later, and not from the original typhoid perforation, this death rate would be materially reduced. But even this improvement, I am convinced, would be more than counterbalanced by the large number of fatal operations which have never been reported. Indeed, it seems to me that the surgeon who can cure one out of five of his patients is to be congratulated, since he is thereby sure that he has saved at least one individual from death, which would irretrievably have overtaken all the five if he had held his hands and refused the one hope offered by medical science of to-day.

It would seem as the result of my deductions from a large number of collected cases that the prognosis is more favorable in girls between the ages of 10 and 15, where the perforation occurred during the first week of the disease and when the constitution was still strong, or where the convalescence was pretty well established, and where the operation was performed immediately after the symptoms of perforation were recognized. It is certain that an early diagnosis, with prompt surgical intervention, is of prime importance if the desired results are to be attained.

OPERATION.

The operation for intestinal perforation is probably too familiar to everyone here to-day for me to take up too much of your time in discussing its technic at length. Yet, I think it is important to insist on performing it as soon as possible, and to shorten the time consumed in its performance to the utmost of our ability. I never wait for the shock to pass before opening the abdomen. The time which elapses from the first suspicious symptoms establishing the diagnosis, obtaining the consent of the patient and the family to operation, and in transporting the patient from the typhoid ward to the operating room, is all too great, and I look forward to the time when the consent for the operation will be given in all our large hospitals when the patient is first admitted. The surgeon who waits until the shock of perforation has passed will await the onset of diffuse peritonitis, with the death of his patient. The less time that elapses between the occurrence of the perforation and its repair by suture, the better it will be for the patient.

I have always employed general anesthesia in these operations and see no reason to change, although it has been found that the use of a local anesthetic is preferable in some cases. The operation usually lasts not more than 15 to 20 minutes from beginning to end, and the total unconsciousness on the part of the patient is more valuable by far in the rapid completion of the operation than any of the advantages, imaginary at best, which are claimed for the local anesthetic. It should not be forgotten that ether is a heart stimulant, and even a patient apparently moribund may improve so much under its administration as to render its employment justifiable. In other climates and higher altitudes, I have no doubt that with care chloroform can be safely employed, but certainly in the middle and northern parts of the United States nothing is more satisfactory than ether.

In cases in which the diagnosis remained uncertain, but in which the symptoms did not ameliorate, I think an exploratory laparotomy is to be earnestly recommended. Experience shows that even if no perforations exist, most of these cases are nevertheless materially improved by the intervention; while in not one of the reported instances do I think the operation can be said to have in any way hastened death. I operated on two cases, in neither of which was there perforation found, but which went on to a favorable termination.

There are few surgeons at the present day who advocate other than the right iliac incision. Those who still employ the median incision must, I think, have a somewhat limited experience. The incision which I prefer is through the outer half of the right rectus muscle. It is straight, simple, direct and economical of time. The deep epigastric artery is not apt to be severed, with ordinary care and using the handle of the scalpel and not the blade to separate the muscular fibers. It is this route which gives direct access to our landmark, the cecum, and that portion of the gut which is most affected. It affords sufficient room for exploring nearly the whole abdomen and can be extended in either direction at need, and offers excellent drainage facilities.

When the peritoneal cavity is opened the cecum should immediately be located, when the vermiform appendage is at once recognized and can be removed if necessary. If the extravasation is free, no packs are required. If, however, peritonitis is fairly well circumscribed, the affected areas should be walled off with large pads. The ileum is next drawn into the wound and carefully examined. For this examination it is of very great advantage to have two pairs of eyes, as it passes rapidly through the surgeon's hands, one watching the upper and the other its lower surface. It is usually inadvisable to replace the gut at once on withdrawal, as this consumed valuable time which is better spent searching for the perforation until found. If there still appears to be reason to consider a perforation present, the eventrated parts should be re-examined, commencing at the highest part withdrawn and ending at the cecum, the coils being replaced as the return is made, but the highest coil being kept out of the belly until the others have been replaced as the starting point for another search, which should proceed upward along the ileum with like maneuvers, until there appears no further prospect of finding a perforation, and this probability decreases and the area of greater inflammation is left behind. If fecal extravasation is free, a medium or large-sized hole may be expected. If lymph abounds and clings to the bowel in patches, frequently beneath one of these patches will be found the pin-head lesion, as a dark spot occupying the middle of an intensely congested Peyer's patch.

As soon as the perforation is found it should be sutured and the toilet of the peritoneum should not be commenced until further soiling of it has been prevented. In about one in eight cases more than one perforation is present, and hence diligent search should be made of all inflamed areas and every spot threatening perforation should be investigated. Inversion of the perforation with Lembert's sutures of black silk is usually best done in the long axis of the bowel, as there is less risk of producing stenosis of its lumen. Sutures applied transversely to the bowel are, however, more prone to tear out as the intestinal coils tend to resume their normal convexity.

Excision of the ulcer is not only useless, but harmful, as it consumes unnecessary time and may cause hemorrhage. If the perforation is so large as to preclude suturing, an omental flap should be adjusted over the defect, or if this or some similar device fails, an artificial anus should be established. Excision of the affected bowel by an end-to-end anastomosis is too severe an operation to be undertaken, and in every instance reported where it has been performed has proved fatal. The formation of a fecal fistula, on the other hand, is easy of execution, being possible merely by the judicious disposition of gauze packs, and if it were not for the impossibility of adequately draining the peritoneum through a wound in which feces are constantly discharging, it might be a procedure to be highly recommended.

My preference is distinctly for suture of the perforation first, then for suture of the omental flap, and then, all else failing, the establishment of a fecal fistula.

The toilet of the peritoneum must next engage the attention of the surgeon, and is a matter much in dispute in cases of peritonitis from any cause. Where on opening the abdomen it is found to be filled with fluid and escaped feces, there is no doubt in my mind that thorough irrigation with hot saline solution is the most efficacious and rapid means of cleaning the abdominal cavity, and I am sure that if rightly done it offers the patient the best chances of recovery. However, in cases where there is little or no escape of intestinal contents, where lymph has been thrown rapidly over a

small perforation, I think that often judicious dry sponging with gauze will be more efficacious, as there will be less tendency to distribute infected material over greater peritoneal areas. But in cases where the infective material is at all widely diffused, there is no doubt that thorough douching with hot saline solution is much the more rapid and efficacious means of removing the materius morbi.

To satisfactorily clean the abdomen by irrigation it is not sufficient merely to pour a half tumblerful of cleansing fluid into the abdominal wound and then mop it out again in an aimless manner. The surgeon should be provided with a large tube having a lumen of a half inch in diameter and with multiple perforations. A rubber tube and funnel should be adjusted to this. Through this funnel should be poured gallons of hot solutions, the quantity being more important than the quality, so long as it has a temperature not below 110. This tube is applied first to the pelvis, then to the right and left flanks respectively, and finally, both above and below the mesentery, the surgeon's left hand separating the coils of the intestine, as his right hand manipulates the tube. The funnel should be held two or three feet above the abdomen of the patient, and the irrigation should be continued until the fluid returns clear.

During the irrigation it has invariably been my experience that the patient's pulse improves. This is no doubt due in part to the temperature of the solution employed, but also, I think, is to be attributed to a direct distention of the vascular channels with the saline fluid.

When the surgeon is satisfied that the abdominal cavity is as clean as it can be made by this method, but not before, the tube may be withdrawn, but he should allow the remaining portion of the fluid which has already escaped to remain within the abdomen. Drainage is best maintained by large gauze wicks, placed in those portions of the abdomen where the fluid is wont to accumulate. Usually the pelvis, each loin, and the sutured area should each be drained by a separate large wick of gauze, and the gauze should remain in place from five to seven days at least. Too early removal of the drain is not only very painful to the patient, but renders the formation of a residual abscess much more likely.

The intravenous use of normal salt solution during the operation is one of the most valuable means we have for preventing shock and sustaining the patient during the first few hours after the operation. The greatest number of deaths after operation occur within the first twelve hours, and if by any means life can be sustained until this period is over, the chances of recovery are materially increased. If the administration of saline solution is to be continued after recovery from ether, it is best given by hypodermic or enteroclysis. A pint may be given through a high rectal tube every three or four hours, the fluid being allowed to absorb slowly.

As a rule it is preferable to have the head of the patient's bed elevated, thus favoring drainage from the pelvis along the tracts of gauze. No food should be given by the mouth until the third or fourth day, nourishment being maintained by nutrient enema. The quantity should be small, depending somewhat on the toleration of the rectum. When food is finally given by the mouth, it should be remembered that the patient still has typhoid fever, as well as a sutured area in the intestine, and it should be of the softest and blandest character.

CONCLUSIONS.

1. Perforation of the bowel in typhoid fever is a much more common condition than is generally supposed, being responsible for about one death in every three cases.

2. The most common time of perforation is between the fourteenth and twenty-first day of the disease, and occurs in all grades of severity, from the ambulatory to the hemorrhagic type, and does not seem to be any more common in the hemorrhagic than in the milder types of the disease.

3. The ileum is the most frequent site of perforation, in the majority of instances the perforation occurring within 12 to 18 inches of the ileocecal valve. The next most frequent sites of perforation are the appendix and the cecum.

4. In a large percentage of cases pain is present, although it may be transitory in character. In about one-half of the cases the onset is sudden, severe, and with increasing intensity, localizing itself in the region of the right iliac fossa.

5. Tenderness and rigidity are present to a certain extent in all cases. The latter symptom I regard as a most valuable sign, and it is never wanting except in patients with unusually large and pendulous abdomens.

6. When perforation is suspected the temperature should be taken every hour, as it is only in this way that definite conclusions can be drawn with regard to any marked variation in this symptom.

7. Distention is a late symptom of perforation, usually not making its appearance until some hours after the perforation has occurred. The obliteration of the liver dullness is not regarded as a reliable sign of perforation.

8. The study of the leucocytes is of little aid, although occasionally their increase may make you more positive of the diagnosis. The differential count is of no practical value.

9. Before a positive diagnosis is made, pain caused by a pleurisy, pneumonia, cholecystitis, acute gastrointestinal indigestion, iliac thrombosis, appendicitis, peritonitis, the passage of a renal calculus, distended urinary bladder, or even a hemorrhagic exudate into the abdominal muscles, must be carefully considered. Any of these conditions may cause symptoms similar to those caused by intestinal perforation.

10. Nature may occasionally close one or more perforations, but the only rational procedure where perforation occurs is surgical intervention. No case is too desperate for an attempt, as it has not infrequently been noted that the mild cases succumb and the more desperate ones recover.

11. In cases of doubt where the symptoms point to perforation, the safest procedure is to operate. As a rule, cases operated on and no perforation found seem rather to be benefited than otherwise by the operation.

12. When the diagnosis has been made, I know of no condition, except possibly that of hemorrhage, where speed in operating is so important a factor in securing success as it is in intestinal perforation. Everything should be carefully prepared beforehand and all conditions considered, so that when the knife is once taken in hand things may move with rapidity and without interference. In too many instances it is a race with

death and there are often anxious moments when it is questionable which will win, yet in only 5 reported cases has death occurred before the operation was completed. A death on the table is always a most distressing occurrence in surgery, but doubly so if the surgeon has in any way to blame himself for delays which might have been prevented by care and forethought.

DISCUSSION.

Dr. Lawrence Litchfield, Pittsburg, Pa., asked Dr. Harte if he made any blood-pressure records in these cases. Dr. Theodore Janeway has pointed out that the sphygmomanometer is a valuable means of differential diagnosis between hemorrhage and perforation in typhoid fever, particularly if a pressure chart has been kept previous to the emergency. The blood pressure is also at times an important guide in the treatment of these cases. Dr. Litchfield also said that he would like to know if Dr. Harte employs general or local anesthesia in these cases.

Dr. Charles A. Powers, Denver, said that in his part of the country such work as Dr. Harte's has stimulated physicians to be on the watch for typhoid perforations and has made it possible to recognize these lesions much earlier than formerly.

Dr. Morris Manges, New York, said that he reported 19 cases last year, and in only 3 was there a drop in temperature; in fact, in some cases it rose. He believes that sweating and rigidity are symptoms of considerable value. Dr. Manges thinks that too much attention is paid to percussing the spleen, and that if more attention were paid to the liver and less to the spleen it would be better. He believes that spontaneous recovery is possible. In cases in which there is no perforation, for some reason or other the subsequent course of the case is always improved by operation, and he believes it wise to give the patient the benefit of the operation.

Dr. Richard Harte stated, in reply to a question, that he has had no experience with blood pressure, but it is a well-known clinical fact that in peritonitis and in the pre-peritonitic stage there is a disposition for the blood pressure to increase. He has always been in the habit of using ether. Some of his colleagues, he said, have used cocain, but he thinks, on the whole, that a general anesthetic is much preferable, as the patient's condition usually improves under the anesthetic. In closing the ulcer he uses fine black silk mattress sutures placed parallel to the long axis of the bowel. If the ulcer is very large, sometimes in order to close it stitches will have to be inserted in the reverse way; this has a tendency to shorten the bowel and to make the stitches more liable to tear out. If the condition is very bad he thinks it is safer to establish an artificial anus. There is nothing whatever to be gained by excising the ulcer. He feels confident that in all cases if the temperature is carefully and frequently recorded a distinct fall will be observed, which will assist materially in making a diagnosis. He expressed himself as greatly indebted to the courtesy of his medical colleagues for having allowed him to study their bad typhoid cases with them. This is of great advantage, since these cases so often pass from the hands of the physician to the care of the surgeon, and if the surgeon has been in consultation he may recognize changes which are likely to occur and is thus in a much better position to recognize them when they do occur than if he is seeing the case for the first time.

Consciousness and Its Degrees.—At the recent International Congress of Psychology Dr. Paul Sollier said that consciousness is not an autonomous primordial or independent phenomenon that can be isolated, that has an action proper to itself acting on other psychologic manifestations. There is no consciousness outside of cerebral activity. Consciousness is not even an epiphenomenon, as it exists even when we do not see its manifestations. If every cerebral center, taken individually, contributes to the production of consciousness, it may be said that there exists an indefinite fragmentation of consciousness—according to the number of cerebral centers that are brought into play.—*Journal of Mental Pathology.*

DELAYED UNION AND UNUNITED FRACTURES.*

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Norris has made general and elaborate classifications of these conditions, which are, in substance, as follows:

Class 1.—Delayed union, callus forms and union is not rendered complete by ossification.

Class 2.—Entire want of union, the ends of the bones are diminished in size, there is motion between the fragments and the limit of this motion is usually small.

Class 3.—With fragments small, rounded off, tapering and bound together by fibrous bands.

Class 4.—Pseudarthrosis; a dense capsule seems to form around the ends of the bones; on opening this a fluid is found resembling synovial fluid. The ends are eburnated.

By referring to numerous authors along about the fifties, I found a few notes in regard to the causation of ununited fractures. The principal ones correspond very clearly to our present ideas, and I am sure that this quotation from Velpeau places him and his opinion on the causes of ununited fractures among many surgeons of to-day. It is this: "If the fracture, whatever may have been the primitive cause, shall have become reduced to an effect already local and shall have not united, partly because its two fragments have cicatrized separately."

He also quotes the following facts from the "Cyclopedia of the Practice of Surgeons," published about that time, in regard to the result of treatment in these certain cases, which I insert at this point simply as a matter of history.

There were 150 cases recorded, of which 46 were treated with the seton, 36 of which were cured, 3 were partially cured, 5 received no benefit, and 2 died. There were 38 in which resection was tried, 24 were cured, there was 1 partially cured, 7 received no benefit, and 6 died. There were 36 cases in which pressure and rest were employed, 29 were cured, 1 was partially cured, and 6 received no benefit. There were 8 in which caustic was employed, 6 were cured, and 2 received no benefit. There were 11 cases in which friction was employed, and 11 were cured. Eleven cases were treated by the use of iodin injections, hot iron and amputation. Seven were cured, 1 received no benefit, 2 died and 1 remains uncertain.

It is also interesting to note that in 1760 a surgeon by the name of White operated on an ununited fracture of the humerus, in which he parted the two ends of the bone, sawed them off and placed the freshened ends in apposition; and also operated on an ununited fracture of the tibia, in this, however, merely exsecting the upper end, and in both cases obtained perfect results.

I am sure that these results must seem more or less remarkable to us at the present day, with our extreme ideas of asepsis and the constant fear that exists in our minds lest pus should form in our wounds when operating for these conditions, and our willingness to attribute a failure under these conditions to the presence of such an infection.

Velpeau, in his conclusion in regard to ununited fractures, explains it as his opinion that the seton will only succeed in these cases where the ends of the bone are in actual contact or nearly so, and that in all these cases in which the ends of the bones are not in contact there is no operation that promises better results than resection.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

In the American appendix to this treatise of Velpeau, Dr. Blackman has given the details of an operation which I believe was devised by Professor Brainard, of Chicago; it is probably our present drilling operation, and in 1854 Brainard published descriptions of seven cases in which six operations had been successful. This drilling was supposed to be of use by bringing surfaces of bone freshened by the operation into apposition.

Local conditions probably have more to do with ununited fractures than do constitutional states. Though just what these local conditions may be, it is not always easy to tell. For a long time the prevailing opinion was that ununited fractures depend very largely on some interposing substance which interfered with repair, such as muscles, tendons, arteries, nerves and fascia. The prevailing idea of such an interposition, no doubt, depends on one or two reported cases of fracture, in which a bundle of muscular tissue had become incarcerated between the fragments, and particularly one case in which there was a fracture of the clavicle that was firmly united, but in which the callus had been thrown out over and around the muscle so that there was a fenestration through which the muscular fibers passed. The possibility of muscular fibers being interposed is very materially lessened on account of the natural contractility of the muscles. We have all noticed in amputation that when the muscular fibers are severed they retract; we also have noticed when, as the result of the injury, a muscle has been ruptured, that usually if the rupture involves sufficient bundles of fibers, retraction occurs so that a depression may be felt, which depression, of course, depends on the extent of the injury and the length of the muscle, as well as its tonicity.

It has also been noticed that, in an injury in which the tendons have been severed, there is a very decided retraction which at times is very difficult to overcome. In the majority of instances of fracture, the muscle itself is not extensively lacerated, though probably there are very few fractures in which some injury does not occur to the surrounding muscular tissues. Also in fracture there is seen a spasmodic condition of the muscles depending on two acts: First, on Nature's effort to fix the ends of the bone to avoid motion between the proximal ends of the fragments, also to save the patient from pain, and, second, on the irritation of the ends of the fragments of the bone in the muscular tissues—itself a sufficient cause of this spasmodic state of the muscles. By this action lacerated muscular fibers would, no doubt, be pulled from between the ends of the bone should they have become incarcerated in the place of being allowed to remain in their false position, and hence later to prevent union. So, also, would the treatment, which should be employed in every case of fracture, that is to overcome the strength of the muscle so far as possible by extension in order to enable us properly to reduce the fracture, tend to withdraw all fragments of muscles that might become incarcerated. This, it strikes me, would apply both to the lacerated muscles and to the muscular fibers that were not lacerated, and I believe, in consideration of the above facts, that muscular fibers and tendons only rarely play any part in the causation of ununited fractures. Such instances as may be demonstrated, either by operation or postmortem, to have occurred, are rather only medical curiosities, and many times I fear that the fibrous tissue that has been thrown out to complete the pseudarthrosis has been confounded, at the time of operation, with the muscular tissue. I know that this idea has been advanced more than once.

Considering the subject of ununited fractures, it, of course, is necessary that we have some idea of the method of repair of ordinary fractures, in which the periosteum is usually lacerated, but not often torn apart. Its fragments are separated from the bone over a greater or less area and theoretically, at any rate, bands of the periosteum after the injury will, no doubt, maintain the continuity of the membrane. There is also a hematoma of varying amount, depending on the character of the bone that is injured and also on the amount of injury to the surrounding bones. Part of this blood is absorbed and part of it finds its way between the layers of muscles and fasciæ to the surface and is thus removed from around the seat of injury.

The process of repair begins simply by granulations spreading from the shreds or non-lacerated portions of the periosteum and by filling the space between the ends of the bone, which goes to form the provisional callus, completely enveloping the seat of injury. Its shape and size and the relation of the bone ends depend on the amount of displacement, so that the callus is formed gradually by a thickening of the periosteum and granulations from the soft parts of the bone ends and the marrow (which is slower in forming) on the thickness of the periosteum and on the granulations from the soft parts of the bone ends.

The major part of the callus, the periosteal part, first becomes cartilaginous and then bony. That coming from the marrow becomes bone directly without the intervention of callus. The slowest part of the callus to develop is that between the bone ends, inasmuch as the circulation is here very poor and because a certain amount of the thin shell along the surface of the bone has been deprived of its nutrition and has to be absorbed, and this portion of the callus only forms from bone granulation. The final stage of this bone formation occurs in the absorption of the exuberant callus. The process is really incomplete until months after the reception of the injury. From the very nature of events it must be granted that compound fractures are more liable to be followed by variation in the normal process of repair than are simple fractures, for there is more disturbance of the surrounding tissues, and such local conditions must of necessity have their effect on the other bones.

In compound fractures, the violence is, of course, more severe. The periosteum is often times completely lacerated and destroyed, in some cases even sloughing off as a direct result of the injury. The violence done the soft tissues by protruding bone may so destroy the vitality of the tissues that there is an increase of possibility of infection, and it may be sufficiently severe to cause sloughing of the soft parts. Since we have seen that the periosteum plays such an important part in the primary, or in point of time first, location of granulation tissue, it is but fair to conclude that those injuries that cause extensive disturbance and retraction of the normal relation of the periosteum would be less liable to be followed by good results, and this the more so if apposition could not be or were not maintained.

Compound fractures are attended with hemorrhage, as a rule, and this probably acts on the part to delay the formation of granulations which we have seen are so essential to callus formation. I recall one or two instances in which a hematoma had existed for some time, had been evacuated, under other conditions, and in neither of these was there any evidence of the formation of granulation.

A colleague, Dr. Yocum, of Tacoma, called my attention to the fact that all cases of ununited fractures that

he had operated on and drained had done well, and that all cases in which drainage had not been used had done poorly, and on account of this he advocates the use of drainage more frequently. In cases that had come to operation, and by way of emphasis of the correctness of this method of procedure, he had made another observation, which was this: Two cases had been operated on without drainage, with the result that both were failures, but on doing a second operation in each case drainage had been used in both with good results. The drainage used in late operations might act as the seton did years ago. Hemorrhage may also act as a complication on account of its amount, producing pressure enough, unless the hematoma would rapidly absorb, to lower the vitality of the surrounding parts.

In compound fractures it is, of course, desirable not to disturb the parts to any greater extent than is absolutely necessary to enable us to cleanse the wound and to endeavor to make proper apposition of the fragments, and that, of course, can not always be done in some cases, nor can we aid much in the relation of the periosteum to the ends of the bone. Malpositions often cause delay in union, or in others lack of union. It is wonderful what measures Nature takes to provide for and to overcome our many imperfections and lack of skill in providing for union of fractures. None are more wonderful than can be seen in many cases of so-called vicious union where only some small area of the fractured surfaces have been approximated and where the overlapping ends of the bone are firmly united to one another to produce a stiff limb; but it is not always that Nature can throw out enough callus to cover two ends widely separated. It is not an uncommon condition to find the ends of the bones fastened to one another by fibrous tissue and a false joint thus formed, showing more or less motion. At other times the bones may be separated latterly one-half inch or so from one another with overlapping ends. One case that I had the opportunity of examining with the *x*-ray very clearly showed this condition. In it had been a large amount of hemorrhage and, of course, much swelling, and there remains the possibility that the ends of the bones may never have been approximated, in which case Nature never had a fair opportunity to provide callus. The operation showed simply fibrous tissue and the ends of the bones reduced in size. In about three months after the operation there was a small amount of callus being thrown out round one bone and none around the second. Two or three years ago I saw a fracture that had occurred five weeks before, where great violence had been done both to the lower part of the tibia and fibula and to the ankle by being crushed between two logs and, as subsequently proved, there was one fracture in the fibula and two in the tibia, though only one was diagnosed until after amputation. Osteomyelitis started in the ankle bones and in the lower part of the tibia, and there was during the progress of this an evidence of non-union. An operation was done to remove the diseased bone from the ankle and the tibia, followed in a few weeks by the second operation, with consent to amputate if found desirable and agreed to by the consultants, but it was not done at this time on account of the inability of three of us to agree. The pain, fever, chills and sweats returned, and in about two weeks more amputation was done. There never seemed to have been any particular effort at repair excepting in one spicule. This is the only case of the kind that I have seen, and I have not seen mention of another one, but I do not see how the presence of such an extensive disease as existed in this case could have failed to produce delay.

Among other causes for ununited fractures is said to be tight bandaging and the use of the leg too soon after the injury. In all cases in which there has been an injury to the nervous supply there is likely to be delayed union. In no case in which a fracture has occurred in the bone at the seat of a malignant disease is union to be looked for, but should a fracture occur in a subject who is suffering from cancer in some other location, the bones being brittle, union should be expected. Pregnancy and lactation have been assigned as causes of delayed union. Likewise syphilis, and especially so during the chancer period.

After all is said and done, the practical point in these cases is the question what shall be done to make useful limbs for our patients. Medical treatment of ununited fractures has assumed many forms, but it is chiefly dependent on the administration of tonics and the use of such hygienic measures as would tend to improve the general condition of the patient. It, of course, can not be denied that in this state, or in any other below par, the lowered general vitality of the patient decreases the general tone of the body to such an extent that many of the normal functions are not being performed as they should be, so that it would hardly be anticipated that any special call of an unusual nature on the functions of the body for the repair of an injury would be responded to in as satisfactory a manner as it would be with the whole condition up to normal. Otherwise it does not strike me that there is any good to be derived from filling the patient up with medicine under ordinary circumstances. There have been some cases reported, however, in which the administration of thyroid extract is supposed to be of value. This report is based undoubtedly on but few observations which have been made in cases of delayed union, also on a few cases in which there was an absence of a part of the thyroid gland or cases in which that function was interfered with, in which the administration of this material seemed to be of value, and possibly it would also be suggested by the effect of the administration on the gland in producing an increase in the growth of the bones in cretinism. One case is reported in which union was delayed for eighty days, and after the use of thyroid extract, five or six tablets a day, of a grain and a half each, union began and a useful limb resulted. It is not unusual, however, to see cases in which union is delayed such a length of time and a firm limb follow without the administration of any medicine. With its use I have only had one experience, and the result of that was negative. In all cases in which there is a specific infection, treatment for that condition is undoubtedly advisable.

Next to medicinal treatment on the basis of simplicity is to put on the limb a good strong plaster cast and set the patient out with a pair of crutches, with the instructions that he should use his limb, that is, putting a small amount of his weight on it as he walks around from time to time. In many cases this is associated with more or less pain at first, but the patient gradually becomes accustomed to it, so that there is very little inconvenience.

I at present have under observation a patient who had a compound comminuted fracture of both bones of the leg, over eighteen months ago, who is walking around without any support other than a cane. The bones have slipped by one another, and he says that it is with very little inconvenience or pain that he travels. I have seen a number of patients with delayed union, the length of time which has elapsed since the injury varying from two to five months, that have made good recoveries simply by this treatment,

and I believe that before any operating measure of any kind is undertaken that this method of treatment should be adopted and carried out for a period of at least three months, in the hopes that the reactionary effect of the irritation produced by the walking may cause to be thrown out, some inflammatory material or granulation tissue on the surrounding parts, or the periosteum, or between the ends of the bones, or from the medulla that would ultimately be formed into substantial bone. Should this procedure fail, then some operative treatment must be adopted. The simplest of all that is recommended is rubbing the ends of the bones together, but, of course, that would be of no use after the patient had walked around for a number of months, since the bones have undoubtedly had sufficient rubbing. In a case in which the preceding form of treatment has not been adopted, however, this method of making friction might be of use, and this should be followed by the application of a firm cast. The next simplest operation is that of drilling the ends of the bones, which may be done subcutaneously or through an open incision, and this to be followed in turn by fixation in a cast, or by allowing the patient to go around with crutches after fixation, hoping that as before it will excite the formation of a callus and new bone.

The open incision is probably better in some ways, since it gives the surgeon an opportunity to protect the underlying tissues from injury by the drill point, but since it is a fact that ununited fractures more frequently follow compound fractures, I believe that if it were possible to avoid an open incision, it should be done. In many cases it seems that bone operations are necessary, and after all the simpler means have failed, this method should be resorted to, and just exactly the procedures that should be adopted depends on the local conditions. If necrosis exists, all such bone must be removed, and more or less resection becomes a part of the operation so as to bring the fragments into good apposition. One case that I was asked by a colleague to operate on had necrosis of the tibia and of one end of the fibula; all this necrosis was removed, the bones materially shortened and united as an oblique fracture. Infection occurred, but a fairly good result was obtained, and during the progress of this case the wound was treated through a fenestration in the cast. The leg turned in the cast so that the foot described an arc of 90 degrees, the toes pointing inward, and a new cast, after a period of thirty-six hours, was applied, extending above the knee; this held the foot firmly. A good solid leg resulted which he is now using for all practical purposes. Almost any method of treating the ends of the bones can be used that would bring healthy bone tissues in each fragment into apposition. The most common one is to unite the ends of the bones obliquely and use some means of securing fixation.

In some cases, in order to secure this perfect fixation, it might be possible to make a shoulder in each fragment, and so with the two ends of the bone overlapping, as carpenters arrange their heavy timbers, and through this overlapping part to insert some material to maintain the position, either bone pegs, ivory pegs, wire or metal pegs. Silver wire is what I have been accustomed to use. Two or three times it has had to be removed on account of the irritation that it has caused and an existing sinus. I doubt also if silver wire or any more flexible material would produce absolute fixation by itself. Screws and various bracketed metal braces fixing the bone have been devised.

Dr. Leonard Freeman has recently reported a case in which an ununited fracture of the neck of the femur has been treated by fixation by a screw with good results. Parkhill's apparatus is probably the most commonly used, but the results seem to be the same whether the simplest method of fixation or the most complicated method is used. All of these patients can not recover, no matter how much care and attention may be given to them, no more than we can tell the cause of all ununited fractures.

DISCUSSION.

DR. MARTIN, New Orleans, is convinced that many ununited fractures are caused through improper reduction, or the interposition of soft tissues. After the physician has reduced the fracture he should try to get crepitus, as he will then know that there is bony apposition. Wire does not fix the bones. It is impossible to bring the bony ends in apposition sufficiently tight for wire to hold them there. There will always be a certain amount of union. Dr. Martin has been using a wire staple, made of piano wire. This is very stiff and fixes the ends absolutely. He has very rarely had to remove them, but if suppuration occurs this is a difficult matter. He believes that drainage is necessary when one has to sew the ends of the bones. In any event it is always a safe thing. Dr. Martin operated in one case recently in which the injury was so superficial that he had no trouble and got a perfect result.

DR. THOMAS W. HUNTINGTON, San Francisco, said that, with an extensive experience extending over a period of 25 years, he does not recall a case in which delayed union could not be definitely traced to faulty adjustment and malposition. This opinion is based on a large number of cases in which he has operated for the relief of this unfortunate condition. Interposition of foreign material seems to him a consequence of malposition rather than a direct cause of non-union. The point which should be uppermost in the mind of the surgeon is the correct adjustment of the fracture early in its history. In this particular undertaking the aid of the *x*-ray should be invoked as often as possible, and from time to time after adjustment the status of the fracture should be checked up by the aid of the *x*-ray during the course of treatment. It is not uncommon in his experience to find a week after a careful adjustment that displacement has occurred. This happens particularly in fractures of the shaft of the femur in which the aoductors displace the lower fragment internally and the opposite muscles acting on the upper fragment displace it externally. After an honest effort for the correction of the deformity by ordinary means, it has been Dr. Huntington's practice to offer the patient a better result by the use of some artificial means such as wire suture. The maintenance of permanent appositon without such interference is often times extremely difficult if not absolutely impossible.

DR. HARRY M. SHERMAN, San Francisco, said that no one has referred to rupture of the nutrient artery of a bone as a cause of delayed union or non-union. Fractures occur at all ages. In a child so injured, when the nutrient artery is torn off, it is possible to have non-union, and union never occurs when this takes place. The lower fragment is deprived of blood in sufficient quantity and atrophies, and one can thrust a scalpel into it; it is so fragile and soft, while the upper fragment is dense and bone-like. Dr. Sherman has seen this occur in cases in which he has operated to correct a deformity of the tibia, and the line of the section of the bone happened to be across the course of the nutrient artery. Reposition in these cases has never been very difficult to secure, and when the fragments were put in place he felt sure there was no interposition of soft tissue. This tearing off of the nutrient artery can occur in an adult, as well as in a child, and then the upper fragment alone makes effort at repair, the lower fragment does not. Surgeons must count the rupture of the nutrient artery as one of the most important causes of delayed union and of non-union. So far as crepitus is concerned, as testifying to the fact that bone is against bone, Dr. Sherman thinks it should be satisfactory to most of surgeons. He does not mean to detract from the value of the *x*-ray, but surgeons can not have *x*-rays in patients' homes as well as in their offices. The

x-ray should be used to prove or disprove a diagnosis that has been made by the usual clinical methods. A man who does not make an effort to reset his fracture by the old methods, is robbing himself of all his old intelligence. Surgeons must not dull the edges of their senses by the *x*-ray, as it is said the edges of knives were dulled by the discovery of ether.

Dr. J. S. Hunkin, San Francisco, declared that the important point is securing immobility at the seat of injury. The usual failure is not in getting the ends of the bone in apposition, but in making the splint long enough and tight enough to hold them there. Surgeons have been led astray by the idea that swelling would promptly follow if the splint were tightly applied. As a fact, swelling does not take place, provided pressure is evenly graduated, regardless of the tightness. Dr. Hunkin puts all fractures of long bones in a tight, snug-fitting plaster of Paris splint, and he does not see non-union. The splint as usually made is not long enough to secure sufficient leverage. Long leverage and close application spells immobility, and immobility means union.

Dr. W. J. Means, Columbus, Ohio expressed his surprise at the emphasis placed by Dr. Sharples on the matter of drainage in the operative treatment. It has been Dr. Means' experience that better results follow in cases in which drainage is not used. The question of ambulation is confined chiefly, in his judgment, to cases of transverse fracture in which there is good apposition of the fragments. When the question is only a matter of delayed union due to malnutrition, ambulation produces an irritation that will aid very much toward normal repair. In cases in which the fragments are not in apposition or can be forced out of position, ambulation is of questionable utility. He is fully convinced from an extended experience that the main cause of non-union is a lack of proper apposition. Therefore, the open method of treatment is the proper one in a majority of cases. He suggested that the open treatment should be used in all fractures in which proper apposition of the fragments can not be maintained, and that the treatment should not be delayed for weeks and months to ascertain how much Nature may do toward securing permanent union. This method will not only avoid vicious union, but will save much time to the patient. The method of uniting fragments can not be uniform. It depends on the individual case and the conditions with which one has to deal. One of the happiest results that he has had in several years was in a recent case of non-union of a fractured femur, in which operation was done after a period of ten weeks. He found the fragments over-riding; they were placed in apposition and held there by a notch in the upper fragment and a corresponding projection on the lower fragment. The periosteum was sutured over the ends of the fragments with catgut, and the incision was closed without drainage. The leg was then placed on a double inclined plane without extension. The patient made an uninterrupted recovery, and left the hospital seven weeks later with a perfect recovery. Dr. Means believes that if possible non-absorbable material should be avoided in bone operations. The method he suggests is applicable, he thinks, to a large number of cases of fracture of the long bones.

Dr. C. W. Sharples demonstrated his method on the blackboard. He has used silver wire and has obtained good results, but he is sure silver wire does not secure the best apposition. Wherever the periosteum can be saved it should be done. Whenever it is possible to do so, he believes that the best method is to cut a shoulder on each fragment and to fasten these together with some sort of pegs. Surgeons will thus come nearer getting good results than by any other method. More raw surface will be brought into apposition. Fibrous tissue intervening between the ends of the bones and causing ununited fracture is nothing more than an attempt to heal the parts. This is a part of the formation of an ununited fracture. In fractures of the tibia, one needs very perfect apposition. Many cases of fracture have not united well, and yet the result has not been considered vicious union. The part that the nutrient artery plays is important. Dr. Sharples believes that he has seen a case of ununited fracture due entirely to an injury of the nutrient artery.

A PHILIPPINE FEVER.*

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MANILA, P. I.

We wish to place on record two cases of an infectious disease, occurring in the Philippine Islands, which is characterized by a remittent fever of short duration and the presence in the blood of a motile hemocytozoon. These cases will be of particular interest to medical officers of the U. S. Army in the Philippines, where yearly numerous cases are recorded in the sick and wounded reports from the various posts as "fever, type undetermined," and this in spite of the fact that careful microscopic examinations are almost universal and that the resources of the Division Hospital laboratory are easily accessible for serum diagnoses.

Case I.—J. R., private, First Cavalry, Hospital Corps, U. S. Army, admitted to hospital Aug. 1, 1905.

Family History.—Father died of diabetes, mother of cerebral hemorrhage. No brothers or sisters.

Personal History.—Had diseases of childhood. No pneumonia, typhoid, dysentery, malaria or rheumatism. The patient states that during his two years of service in the Philippines he has always been healthy and well. He is 25 years old.

Present Illness.—No premonitory symptoms. Was sick one day previous to admission. Had slight chill, followed by fever, but no sweat. Fever continued to time of admission. Slight headache, no pains in back and limbs.

Condition on Admission.—The patient complained of fever and general malaise. He looked sick. He suffered no actual pain. No cough, no expectoration, no dyspnea, no vertigo, no headache, no cardiac palpitation, no nausea and no vomiting. Appetite was poor and bowels were constipated. Patient stated that he was passing normal amount of urine.

Physical Examination.—The patient was a well-nourished white man. Skin in good condition. There was no rash present. Face was flushed and conjunctivæ injected. The lungs were clear throughout. Heart sounds were clear and of good quality. Area of dullness, lower border third rib, left parasternal line, to the apex beat, which is visible and palpable in the fifth interspace mid-clavicular line. The liver is not enlarged. The spleen is found between the ninth and eleventh ribs and is not palpable. No tenderness in the abdomen, no masses, no distension.

The laboratory reports show a negative diazo reaction, a faint trace of albumin and no sugar and casts in the urine. The red blood count was 5,344,000, the white blood count was 5,200, the hemoglobin 100 per cent. and the differential unimportant. The blood culture and an inoculation into a monkey were followed by negative results.

After the patient had been in the hospital for three days with a fever suggesting typhoid infection, the fever fell by crisis, whether as a result of the hypodermatic administration of quinin or not we can not say. On August 3 the patient vomited a small amount of greenish fluid, and on the 4th he had a sweat for the first time, which was of slight duration and amount.

Without any complications the patient passed through a rapid and uneventful convalescence and was discharged. (Chart of Case 1).

The interesting point in the case was the finding in the red blood cell of a hemocytozoon entirely different from the hemameba of Laveran. It was lying in red blood cell which was uncrenated and free of vacuoles. The cell was of normal size and color. The organism was approximately 2.5 microns long and 1 micron broad, was unpigmented and refractive to the same de-

* From the Wards and Laboratory of the Division Hospital, Manila, P. I.

gree as the malarial parasite. By frequent and irregular alternate contraction and lengthening of the longitudinal and transverse diameters the parasite varied in shape between an ovoid and spindle form and at times what was apparently the underlying hemoglobin became visible. After being observed for several hours it became motionless and with the enclosed hemoglobin appeared as an oval-shaped body. In specimens kept over night a few narrow, ring-shaped bodies were found.

Of still greater interest is the motility of these organisms. This was of two kinds. The first depended on a revolution on either one of its two axes. When revolving on its transverse axis, it appears as a refractive dot or as described above. When revolving on its longitudinal axis, it appears as described above or as a slightly curved rod with slightly bulging ends. The change in revolution from one axis to the other was continual and the rapidity was very great.

Inasmuch as the Division Hospital receives a great majority of its patients transferred from various post hospitals, we have seen very few of these cases of fever of short duration, but we believe from what we have learned from surgeons serving in certain posts that there is an unknown fever in the Philippines which lasts between three and ten days in which no malarial parasites are found and which may recover without the use of quinin. The cases which we have reported appear to be similar to those that have been described to us, and if the diseases are identical the reason that the parasite has not been generally recognized is probably on account of the fact that it is found in very small numbers in the blood, no more than one parasite being found in one coverslip preparation, and it being frequently necessary to examine three or more preparations before the parasite is discovered. We have been unable to stain the organism, in spite of the fact that

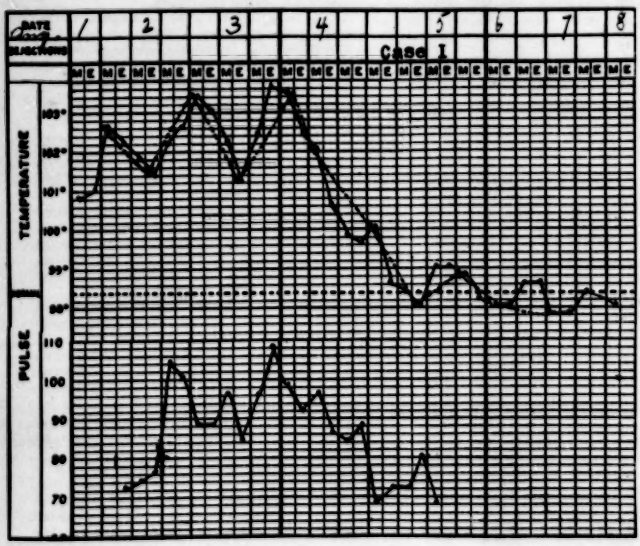

Chart 1.

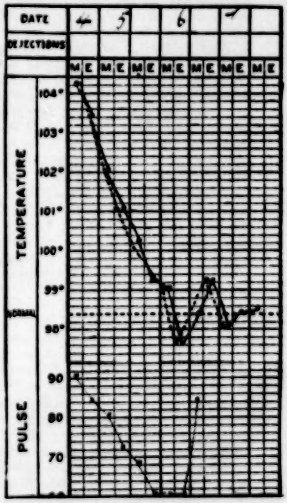

Chart 2.

The second form of motility is the movement of the organism in relation to the containing cell. The organism would not remain stationary in the cell, but moved rapidly from one position to another, while maintaining at the same time its independent motility.

Case 2 is similar to Case 1 in most respects and is reported inasmuch as the temperature fell by crisis without the administration of quinin.

CASE 2.—The patient gave a history of three days' illness, which started with vague chilly sensations, but no rigor, fever but no sweating (Chart 2). He suffered with severe muscular pains. The crisis was followed by profuse sweat. All signs and symptoms in this case improved immediately and the patient was discharged a few days later in normal health.

The laboratory examination showed a slight trace of albumin and unimportant findings in other excreta.

On the day following admission the blood showed a hemacytozoon similar in many respects to the one found in the preceding case, but smaller, less motile and less refractive.

we have used the various approved methods for staining protozoa, including a Wright stain that readily stains chromatin, but we believed that possibly our attempts were in vain because of the fact that our coverslips did not contain the parasite.

We have described hitherto only the motile parasite. We have, however, found other resting bodies described by Cropper[1] in detail and also noted by First Lieutenant H. M. Smith,[2] Assistant Surgeon, U. S. Army, but these resting bodies are so difficult to distinguish from artefacts and occur so frequently in the blood of residents in the tropics that at present we are unwilling to recognize them as parasites.

Regarding the motile hemocytozoon, so far as we know, Smith was the first to describe it. Although his cases were included under the heading of estivo-au-

1. Journal of Tropical Medicine, May 1, 1905.
2. Surgeon General's Annual Report, 1904.

tumnal malaria, he states that the form of the parasite was so peculiar as to make it difficult to decide whether it was really a malarial parasite or some other organism entirely distinct.

We have attempted so far only to describe a disease and an organism associated with it in the blood. On account of the absence of pigment and ameboid movement and the fact that we could notice no growth nor find any extracellular forms, we believe that this parasite does not belong to the same genus (*Hæmamœba*) to which the malarial plasmodium belongs.

Special Article

IMMUNITY.

CHAPTER XXIX.

LEPROSY.

Leprosy existed in Egypt in prehistoric times and extended to another land only when intercourse was established between the two countries. It reached Greece at about 345 B. C., Italy in the first century before Christ, and from the latter country extended to Germany, France and Spain. Crusaders returning from the Orient also brought back the disease in later times and eventually all Europe was infected. Leprosy is known to have existed in Great Britain in the tenth century, and from that country it was carried to Iceland and Greenland. From Germany it extended to the Scandinavian countries, and from the latter to Finland and Russia. It also reached Russia from the South and East, and in the South it was at one time called the Crimean disease. The West Indies and South America probably were infected from Spain, and through these channels the disease was carried to the southern states. The leprosy of the western states seems to have been imported by Norwegian immigrants chiefly. In 1902 the United States leprosy commission found 278 cases in this country. One hundred and eighty-six of these individuals probably contracted the disease in this country, 120 were born in foreign countries and 145 were native born. The disease also extended around the globe in the opposite direction, reaching China, Japan and the East Indian islands from India. The Sandwich Islands became infected in the nineteenth century.

Course of Extension.

The contagiousness of the disease appears to have been recognized at a very early period. In 636 A. D. leprosy houses were instituted in Italy and other countries, and the practice of segregating lepers soon became general. The hospitals were called Lazarus houses in middle Europe and St. George houses in Scandinavian countries. Pipin and Charles the Great declared marriage between lepers illegal. The rapid disappearance of leprosy in middle Europe during the sixteenth century is ascribed largely to the segregation of the patients.

In 1872 Hansen announced that small rods, sometimes intracellular and sometimes free, were to be found constantly in teased preparations of leprous tissue. These rods, leprosy bacilli, are now universally recognized as the cause of the disease, and in 1879 they were stained by Neisser and a year later by Hansen. The organism is non-motile, has about the dimensions of the tubercle bacillus, the same staining reactions, and frequently shows a beaded appearance (degeneration forms (?)). It is said to take up dyes more readily than the tubercle bacillus, but the difference is not so great as to be distinctive. It stains by Gram's method.

Bacillus of Leprosy.

Success in cultivating the bacillus has been reported a number of times, but the researches of others have failed to confirm these successes. Up to the present time it is probable that the organism has not been made to grow in artificial media. The resemblance of the bacillus to other acid-fast organisms, which are not pathogenic for animals, and the non-susceptibility of experiment animals to leprosy, are conditions which render very difficult the identification of a culture as that of the leprosy bacillus. Nicolli is said to have produced leprous nodules in monkeys by inoculating them with diseased tissue.

So far as known the organism has no natural existence outside the human body, and it is disseminated only by the secretions of the diseased. It is discharged chiefly through the secretions of the nose and the upper respiratory passages, the surfaces of which are so commonly the seat of leprous ulcers, and also through ulcerating lesions of the skin. Expectoration, sneezing and coughing have approximately the same significance for the dissemination of leprosy bacilli as of tubercle bacilli. Infected droplets of sputum may be emitted by forcible speaking. It is stated that the organisms found in the sputum and nasal secretions appear to be largely degenerated, a condition which may lessen the infectiousness of these substances.

Dissemination.

The infectiousness of the leprosy bacillus is of a low character. "Epidemiologic experience teaches that infection occurs only through intimate and prolonged association with the diseased, in which doubtless uncleanliness plays a very important rôle" (Gotschlich). A leprous husband eventually infects his wife, and the children of lepers commonly develop the disease early in life. The high percentage of leprosy which is noted among the laundresses of infected localities indicates that the disease may also be transmitted by indirect contact. Gotschlich throws some doubt on the importance of dust infection since so many of the bacilli found in sputum appear to be degenerated. Nothing is known of the resistance and viability of the organism outside the body.

Transmission.

On account of the early appearance and almost constant occurrence of leprous lesions in the nasal passages Stricker believes that the latter constitute the chief infection atrium; of this Hansen is not positive. Nasal ulcers may be present in latent or apparently healed cases. Kolle cites a case showing extensive involvement of the spleen and liver in which the intestinal tract was considered the infection atrium. In some instances in which the disease is first noted in the feet, the organisms are supposed to gain entrance with infected soil through abrasions in the skin. According to Cornil and Babès, infection may take place through the hair follicles and sebaceous glands. The theory of Jonathan Hutchinson that leprosy may be contracted through eating diseased fish, or that the latter in some way may render the individuals susceptible to infection, has no foundation in fact. Hereditary acquisition of the disease is of doubtful occurrence, although the bacilli have been found in ova (Babès) and commonly are present in enormous numbers in the testicles. Hansen states, however, that he has never found them in the female generative organs.

Infection Atria.

The presence of large masses of bacilli in leprous tissues is a characteristic of the disease. To a large extent they are intracellular, and they are often grouped in such a way as to resemble bundles of cigars. Hansen believes that the bacillus is essentially an intracellular parasite, and that it becomes extracellular only as a result of degeneration and disintegration of infected cells. Unna, on the other hand, considers their location in lymph spaces as most characteristic. They appear to be carried to distant parts through the lymphatics. Certain large vacuolated cells, the lepra cells of Virchow, the *globi* of Hansen, which are filled to bursting with the leprosy bacilli, are characteristic of the disease. Unna and others consider these bodies as zoöglœar masses rather than as intracellular accumulations, and Kanthack interprets them as bacillary thrombi in the lymphatic vessels. The nodules, or lepromas, consist of granulation tissue, containing many round and epithelioid cells, lepra cells and occasional multinuclear giant cells. In cutaneous macules columns of round cells surround the blood vessels, there is some proliferation of epithelioid cells and there are relatively few bacilli. The bacilli are most numerous in the nodular lesions, although they are present in large numbers in the secretions of the nose and mouth, as stated. They are found in the Glissonian tissue of the liver, in the pulp and follicles of the spleen, in the glomeruli and interstitial tissue of the kidney when these organs are involved, in the nerves in both the nodular

Location of Bacilli.

and maculoanesthetic forms of the disease, and in the vascular endothelium. They have been demonstrated often in the ganglionic cells of the posterior root ganglia and of the spinal cord. Their occurrence in these cells leads Metchnikoff to say that the latter have phagocytic properties.

Endotoxin (?).

In view of the chronic course of leprosy and the absence of signs of intoxication over considerable periods, it seems probable that the bacillus secretes little or no soluble toxin. From time to time, however, patients with tubercular leprosy develop fever, which may persist for weeks or months and eventually terminate in death. During such attacks the nodules not infrequently enlarge, become soft and later disappear. Lie conceives that such periods represent massive infection of the blood with the bacilli, and that at this time the latter undergo extensive disintegration and liberate endocellular toxins to which the toxic phenomena are due. It is a remarkable fact that intercurrent infections, as measles and smallpox, and the administration of potassium iodid, cause a similar enlargement, softening and final disappearance of leprous nodules, accompanied by marked degenerative changes in the bacilli. Hansen is of the opinion that the fever induced by these conditions has an actual curative effect, although its influence is not readily analyzed. He quotes the opinion of Danielssen that potassium iodid may be used to determine the cure of leprosy, which would be indicated by absence of a febrile reaction.

General confidence is not felt in the "leprolin" which Rost prepared from his cultures of the leprosy bacillus (?). His cultures are said to have been mixtures of micro-organisms.

Susceptibility and Means of Defense.

Because of the failure to cultivate the leprosy bacillus, experimental work with the serum and cells of man and animals, by which conclusions as to the defensive powers of the body might be drawn, can not be carried out. It seems probable that all men are susceptible to leprous infection under the proper conditions. Sauton states that children of from 4 to 5 years are particularly liable to infection. Other conditions which may increase susceptibility are of a conjectural nature. It is possible that leprosy predisposes to tuberculous infection (?).

The condition in leprosy seems to be that of an organism of low virulence against which the body possesses no decisive protective agency. The reactions for the most part are of a local nature, involving the proliferation of connective tissue and blood vessels, and the accumulation of lymphocytes. That phagocytosis by macrophages (lymphocytes, connective tissue, endothelial and ganglionic cells) is a factor which antagonizes the proliferation of the bacilli is suggested by the large number of bacilli which are found in these cells.

Prophylaxis.

The principles of prophylaxis may be illustrated by citing the practices in Norway. Originally all lepers were confined to institutions. At the present time, however, only indigent lepers and those who can not be suitably cared for at home are required to enter an asylum, where they live under the best hygienic conditions. Other patients are allowed to remain at home, with the understanding that they sleep alone and, if possible, have separate rooms, that their clothing, linen and eating utensils be used by no one else, and that proper precautions be taken in the washing of linen. Dressings and bandages must be burned. Under these regulations the number of lepers in Norway has decreased from 2,870 in 1856 to 577 in 1900. Banishment to a particular island is practiced in the Sandwich Islands. Segregation of lepers should be brought about in this country.

Carasquilla attempted the production of an anti-leprosy serum by immunizing horses with the blood of leprous patients. Although a few favorable reports concerning its effects appeared it has not proved of value in the hands of others.

Truth and the Physician.—You need not tell all the truth unless to those who have a right to know it all. But let all you tell be the truth.—Horace Mann.

Clinical Reports

EPIDERMOID OF THE RIGHT SUBMAXILLARY REGION.

VICTOR SCHRAGER, M.D.
CHICAGO.

The present case is not reported because of its rarity, but simply because of its clinical importance.

Patient.—Physician, male, aged 60.

History.—In the spring of 1898 the patient noticed a small abrasion on the right side of the lower lip. Previous to that time he smoked cigars excessively. In December of the same year he ceased smoking, and by applying a saturated solution of acetanilid to the abrasion, it soon healed. Encouraged by the healing, he began to smoke again. A few months later, in 1899, there was a recurrence of the trouble. In August, 1900, he consulted a surgeon and immediate excision of the lesion was advised. Feeling some uncertainty as to the nature of his trouble, he had a microscopic examination made, and it was found that it was an "incipient epithelioma." In October, 1900, the epithelioma was cauterized with chromic acid. The ulcer healed, but it left some induration. In the fall of 1902 it recurred. In September, 1904, it was cauterized again with chromic acid and *x*-ray exposures were advised. After fourteen *x*-ray treatments the epithelioma healed very nicely and continued to remain healed.

Examination.—In February, 1905, the patient discovered an oblong swelling below the angle of the right inferior maxilla. He came to Dr. Murphy's office for examination, and an oblong swelling the size of an almond was found, situated as stated above. It was firm of consistency, very slightly movable and adherent to the subjacent tissues. Pressure and manipulation did not cause pain. The patient stated that since the appearance of the swelling he had lost some weight and strength. He also stated that the increase in size was very gradual and slow at first, but that during the last few weeks it had increased rapidly. Considering the patient had an epithelioma diagnosed by the microscope, his age, the relative wasting symptoms, the situation of the swelling in the lymphatic area on the corresponding side, and fixity of the swelling, it was concluded that there was epithelial metastasis in a lymph node. The patient being a physician was not surprised by the diagnosis. He firmly believed that he had a recurrence of carcinoma, and for this reason he was ready to give up his practice and to settle all his affairs in view of future unpleasant events. In spite of his age the man was unusually robust and had no other reason for discontinuing his practice.

Operation.—May 20, 1905, the patient was operated on. The mass had the appearance of a lymph node and was perfectly incapsulated; it was somewhat adherent to the surrounding tissues and was easily enucleated. The patient left the hospital a few days after the operation. The wound healed rather slowly and left an induration in the scar.

Microscopic Examination.—When this specimen was examined in the laboratory an elliptical mass encapsulated in a smooth, intact capsule was found, and a longitudinal incision revealed a whitish pulp containing a cyst cavity in its center. Sections were taken from the pulp and hardened. The microscopic examination of sections showed several undulated layers of epithelial cells, which reproduced perfectly the histologic structure of the skin. Below these layers two three hair follicles and vessels were found; the rest of the tissue was occupied by connective tissue and marked round-cell infiltration. No sebaceous glands were found. A diagnosis of infected epidermoid was made. Prof. Robert Zeit based the diagnosis of epidermoid on the absence of sebaceous glands. Had these glands been present the diagnosis would have been dermoid.

Remarks.—This case illustrates the following points:

1. One should not be too positive of diagnosis of epithelial metastasis when a swelling is discovered on the corresponding side of an epithelioma of the lip. Such a mistake may have serious social results, especially in the case of men engaged in active work and of neurotic temperament!

2. The wasting symptoms and the gradual increase in size,

which are classical elements in the diagnosis of malignant conditions, may be explained in this case by the mental worry of the patient, which is liable to reduce weight, and by the beginning of infection of the epidermoid.

3. Every specimen removed by surgeons should be carefully examined microscopically. At the time of the operation the nodule did not impress the surgeon as being malignant, yet a positive diagnosis could not be made at that time. It is of primary importance that a microscope should be resorted to and the final diagnosis based on the histo-pathologic findings only. Had not this specimen been examined microscopically the case would probably have been recorded as one of permanent cure of carcinoma.

In connection with enlargements or tumors occurring below the inferior maxilla it should be remembered that accessory thyroids may occasionally be found there.

In conclusion I wish to acknowledge my indebtedness to Dr. J. B. Murphy for permitting me to report this case.

UMBILICAL HERNIA PERFORATING THE ABDOMINAL WALL.*

MYRON METZENBAUM, B.S., M.D.
CLEVELAND, OHIO.

Patient.—Woman, an imbecile, aged 56, about 3 feet 2 inches in height; weight, 135 pounds.

History.—For more than twenty years it was known that she had an umbilical hernia. During the past four years the hernia was of such proportions as to indicate that it was formed of a very large portion of the small intestines, with a large part of the omentum. The hernia was never reducible; there always remained a considerable portion of the intestines out of the abdominal cavity. The hernial opening permitted only two coils of the bowel to slip by each other.

The woman aided in performing simple household duties, was able to take care of her person to a very fair degree, but under no condition was it possible to train her to wear an abdominal support.

On the evening of March 19, 1904, the people with whom she lived noticed that her outer skirt was wet and attempted to find the cause. They were resisted with such violence as to compel them to abandon the examination. Early on the following morning I was called, and, on entering the room, was almost overcome by the foul odor, suggesting gangrene.

Examination.—The patient was up and about. I induced her to go to bed, and, on removing her clothing, which was thoroughly saturated, the following unusual condition was observed:

The hernia was much larger than usual, causing the abdomen to protrude upward at least ten inches in height. In the region of the umbilicus the abdominal fat has been worn away, so that in this region the bowels were only covered by the skin. Here there was a circular area 2½ inches in diameter which had become necrotic. At the place where the umbilicus should have been there was a hole fully one inch in diameter, through which the umbilicus and what I thought to be the urachus dangled out on to the abdomen. No attempt was made to reduce the bowel, but a binder was fastened around the abdomen and the patient was removed at once to the Mt. Sinai Hospital for immediate operation.

Up to that time she had not vomited. Her pulse was about 86; temperature normal. She did not seem to be suffering the slightest pain and, judging by her features alone, one would not know that anything was ailing her. She had eaten some breakfast and wanted to engage in her usual duties. The servant was of the opinion that her bowels had moved on the previous day.

From these symptoms I did not consider that there was either strangulation or torsion of the bowel, but that a greater amount of the bowel than usual had been forced through the abdominal opening, causing a very great pressure on the thin abdominal skin and producing necrosis.

Operation.—Within an hour from the time I first saw the patient she was on the operating table. With the kind services of Dr. C. A. Hamann, the following operation was performed and the following conditions observed:

Nearly all the small intestines, together with the cecum and appendix and a large portion of the omentum, comprised the hernia. Loops of intestines were grown together with masses of the abdominal fat and omentum, and in many places were firmly adherent to the abdominal wall itself. It was for these reasons that the hernia was never reducible.

The opening in the abdominal wall was not over 1½ inches in diameter, so that the cecum, once being forced through, could not slip back into the abdominal cavity. That which I had considered the urachus dangling through the perforation was a Meckel's diverticulum. This was gangrenous and was amputated, as well as part of the omentum. The bowel itself seemed healthy. The fluid which saturated her clothing was peritoneal fluid and serum exudate from the bowel.

After long and tedious work, the various adhesions of the bowel were broken up, but only after unusual effort was it possible to replace the intestines in the abdominal cavity.

Postoperative History.—The abdominal opening was closed. The time required for the operation was one hour and forty minutes. The patient was returned to bed, and soon it became necessary to administer artificial respiration and frequently thereafter, for it seemed as though her respiratory center was interfered with in a very marked degree. She rallied from the operation, her bowels moved at the end of twenty-four hours, she took considerable nourishment, and became about as intelligent as ever. On the third day a double lobar pneumonia developed, and she died on the evening of the fourth as a direct result of the pneumonia. Up to this time the abdomen remained flat, with no unusual tenderness or soreness and no evidence of peritonitis.

* Read beore the Cleveland Academy of Medicine, 1905.

GUNSHOT WOUND OF THE BOWELS.

O. S. HUTCHINS, M.D.
CANBY, MINN.

Patient.—June 18, 1905, a girl, 13 years of age, while carelessly handling a 22-caliber rifle, shot herself in the abdomen one and one-half inches to the right and slightly below the middle of a line drawn from the umbilicus to the os pubis. She resided at a farmhouse ten miles in the country. Patient had vomited before I reached her, four hours after the accident, and was in considerable pain with limbs drawn up. There was increased pain on slight pressure over the bowels. Considerable shock was present.

Operation.—Preparation for operation was commenced immediately. Under anesthetic, median incision was made into peritoneum. Considerable free and clotted blood was found, which was scooped out. The first loop of bowel in region of entrance of bullet into peritoneum was grasped, pulled out, and six openings in the small bowel were found in searching nearly its whole length. The openings were closed with Lembert sutures of linen (Pagenstecher). The cecum was then examined and a slit one and one-half inches long near the appendix was found penetrating all the coats of the bowel. A piece of feces which projected from the opening was removed with gauze sponge and this opening was closed as before. Drainage was introduced down to the points of suture in cecum and intestines; also into cul-de-sac of Douglas.

Convalescence.—Bowels moved on third day after repeated small doses of calomel followed by enema. Drainage was gradually removed after the third day. Temperature remained from 99 to 101 for three weeks, when swelling developed above the lower third of Poupart's ligament, and in a few days an abscess discharged through the opening left for drainage. After this there was an uninterrupted recovery. Patient was out of bed at the end of the sixth week with small fistulous opening at lower angle of wound, which had completely closed two weeks later. Bullet was not searched for.

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NEW OBSERVATIONS ON HYDROPHOBIA.

There are many points of extreme interest in connection with hydrophobia. Thus, the affinity of the as yet unknown virus for the nervous tissue can not but excite our curiosity, but not to any higher degree than does the very highly specialized mode of elimination selected by this virus, namely, by way of the saliva. There has been some doubt expressed as to whether or not the saliva of human beings suffering from hydrophobia contains the virus. There seems to be no question, however, but that in many cases the saliva of hydrophobic patients is virulent. Recently Bertarelli[1] demonstrated such to be the case in an instance of hydrophobia in a boy. It is interesting to note that Bertarelli found the saliva in this case to be virulent after being filtered through a Berkefeld filter No. 5, thus confirming the observations by Remlinger and others that the virus of hydrophobia belongs in the group of filterable virus. So far, the filterability of virus through filters that ordinarily hold back the smallest known bacteria has been explained as due to the minuteness of the organisms or particles concerned, but other explanations have been suggested also.

Tizzoni and Bongiovanni[2] are studying the effects of radium on rabies, and report that the application of radium to the eye of rabbits injected with fixed virus prevents the development of rabies and may even cure animals in which active symptoms of rabies have become manifest. They found also that radium *in vitro* rapidly changes fixed virus to an excellent vaccine. In the rabid animals treated with radium the nervous disturbances subside first, followed by recession of the fever and the loss of weight. The results reported by these investigators exceed those so far attained by any of the other methods of treatment in vogue, which have little or no effect on the march of the fully developed disease.

On the basis of the results of their experiments, the Italian workers express themselves as willing and ready to apply the radium treatment to hydrophobia in human beings. Should their anticipations be realized fully, a great advance will have been achieved in the treatment of this dreaded disease, many victims of which now succumb because for various reasons the Pasteur treatment, which is successful only when applied early in the period of incubation, is delayed or neglected until too late. The results of the radium method of treatment in established hydrophobia will be awaited with the greatest interest.

1. Centralbl. f. Bakt., 1905, xxxix, 399.
2. Ibid., p. 473.

IMPROVED CONDITIONS ON THE ISTHMUS OF PANAMA.

The epidemic of yellow fever in the southern states has diverted attention for a time from that and other diseases on the Isthmus of Panama and from the activities of the sanitary department of the Canal Zone Government. The report of Colonel Gorgas for July was very encouraging, for, with the exception of yellow fever, there were no quarantinable diseases, which include smallpox and plague, with both of which the isthmus is more or less constantly menaced. Of yellow fever there were but 42 cases in a total population of a little over 52,000, including the cities of Colon and Panama, and of these but 21 developed among the nearly 11,000 employes within the zone. There were but 5 deaths from yellow fever during July—just one-half the smallest, one-fifth the average and one-tenth the largest July yellow fever death rate under the French. The August report[1] shows that the yellow fever incidence had dropped to a total of 27 for the month, the lowest number since April. Since the date of this latest official report the yellow fever situation has continued to improve. Thus, a more recent press dispatch states that "Panama is at last free from the yellow fever. There is but one patient under treatment and he is well along toward convalescence. Hardly time enough has passed yet to be sure that there will be no recurrence, but strong hopes are entertained that the epidemic is a thing of the past. As for the bubonic plague, there has been no case since August 26, and the scare is fast dying out." In criticism of this correspondent it should be said that at no time since the American occupation has yellow fever been "epidemic." Perennially endemic before that time, it is to the credit of Colonel Gorgas and his splendid corps that the disease has been kept from endemic down to sporadic. It was never permitted to become epidemic in spite of the fact that thousands of non-immunes have been sent into the Canal Zone. President Shontz of the commission, on his recent return from the isthmus, reported to the Associated Press an improvement in all sanitary conditions on the isthmus and especially in the appearance of the men employed —a change which he attributed in large part to the improved quarters and to the better quality of food supplied under the present commissary arrangements.

But yellow fever is, by no means, nor has it ever been, the greatest scourge of the isthmus. An examination of the French records since 1882 reveals the fact that, in the city of Panama, the deaths from malaria have at all times been many-fold greater than those from yellow

1. The Journal, October 7, p. 1095.

fever. Associate this with the fact that the mortality from malaria is over fifty per cent. less than that from yellow fever and it will be appreciated that the incidence of the former is very great. In the report of deaths from malarial fever, however, there is as much evidence of improvement as from the more dreaded yellow fever. Thus, during the first seven months of this year, there were but forty-one deaths from this cause. Contrast this with the French records, which showed 133, the lowest number of deaths from this cause, and 687, the highest, with 497, 481, 562 and 448 as examples of intervening figures, and the results of advanced sanitation become apparent. These results have been achieved by a comprehensive campaign, which has embraced the diminution of the anopheles through drainage, fumigation, the use of oil and the introduction of better water supply; the isolation of malarial patients in screened cages and screened wards; and the prophylactic use of quinin as a ration to the healthy.

The better order of things that came after the reorganization of the commission by the President has been nowhere better exemplified than in the almost unhampered liberty that has been given to the sanitary department. This liberty, we understand, is practically restricted only by the money that may be available for sanitary purposes. If this is the case it is safe to assume that one of the most important and necessary items of expenditure will be for close-meshed wire netting with which to screen every barrack, bungalow, office, residence, shop or other structure to be occupied at night by any person, from the commonest laborer to the governor of the Zone. But just here it should be urged that, if the mean health rate is to be maintained at anything like the standard of effectiveness, military discipline must be enforced, by which practically the entire personnel will be compelled to protect themselves against the anopheles. These Colonel Gorgas has shown to be very generally infected and they are accordingly dangerous to all who may be exposed to their bites.

On the isthmus, as at New Orleans, the campaign against mosquitoes is one of primary importance, with the difference that on the isthmus there is never such a thing as a frost to help out the sanitary officers. Quite to the contrary, the weather and the topography of the country there combine to propagate the troublesome pests every day of the year. The report for August emphasizes the fact that the rainy season has set in and that the utmost vigilance and activity is required to keep breeding places for mosquitoes from forming. It has been found necessary to make the maintenance of such breeding places under certain circumstances a finable offense—an excellent stroke of policy that will insure at least partial co-operation of the populace. The real task remains, however, to be performed by the regular sanitary service and it is against tremendous odds that the mosquito brigades have to contend. Their work is, indeed, fraught with such importance that the report of their operations becomes extremely valuable, the element of novelty adding not a little to the interest. Thus we read that the great administration building has been made "stegomyia proof"; that in this great building all containers have been inspected daily and "no eggs of stegomyia or other mosquitoes were found during the month." We are told that "there is a noticeable decrease in the number of stegomyia present in Santa Ana Park since the same was trimmed out by this department in June"; that "all houses and yards are inspected at least every six days"; that "every room of each house is carefully inspected for mosquito larvæ in water containers placed therein," and that "mosquito larvæ (mostly in the early stages of development) were found in 579 of the houses inspected." Brigades of oilers are at work; drainage brigades are after the anopheles; and still other brigades are fumigating the houses. A dozen tons of sulphur and nearly as much pyrethrum have been used in a single month. Pools, tanks, barrels, and sluggish streams are covered with oil. Thousands of crabs have been killed and more thousands of crab holes—propagating places for mosquitoes—have been closed. Cesspools and drains have been cleaned; garbage and vegetation removed. Then, too, the threatened invasion of the isthmus by the bubonic plague has started up the rat-killing business and brigades are out after the rodents, while free rat traps are being distributed to the populace. When, finally, we add to this the treatment of the sick, the ever-vigilant quarantine service, the sanitary construction work and the thousand and one incidental things that must be done in an administrative way, then the picture becomes a little more complete.

We can not refrain from a suggestion to the bureau of vital statistics of the Zone government, and that is to give the adult population and the adult deaths in such wise that the death rate may be designated on an adult basis. This is the point of practical interest in the states where everybody, but especially prospective employes on the isthmus, are concerned about the liability to disease and death incurred by adults who go to the Zone. The summarization, for example, in the last report by simply giving the total number of deaths 265, to a total population of nearly 54,000, is misleading, or at least confusing, and gives the isthmus a less satisfactory reputation than it is entitled to. The impression prevails that these deaths are chiefly among adults, whereas an analysis of the table of "deaths by ages" reveals the fact that 101—nearly two-fifths of the entire number—occurred under 20 years of age. Considering the fact that adults are probably much in excess of sixty per cent. of the entire population, it follows that the death rate among adults must be less than that indicated as the annual average, either for employes of the commission, 35.93 per 1,000, or for the general population of Colon, Panama and the Zone, 64.95 per 1,000.

IS TYPHOID CONTAGIOUS?

A correspondent calls our attention to an editorial in the Grand Rapids *Herald* with the above caption and to the important difference between its teaching and that of former days in regard to the contagiousness of typhoid fever. According to this editorial, Dr. Vaughan of Ann Arbor and others have advanced the idea that typhoid fever is communicated largely by personal contact. Dr. Vaughan is quoted as having made this statement: "I formerly held the view that 95 per cent. of the typhoid fever was transmitted by drinking water . . . but the experiences and information collected by the commission (appointed by the Secretary of War to study the origin and spread of typhoid in the military camps during the Spanish-American war) led me radically to change my views. I believe now that the spread was largely by personal contact. From the observations made, I reached the conclusion that under the conditions maintaining in military camps, personal contact was responsible for the spread of the disease in about 66 per cent. of the cases."

The view here announced is in harmony with recent knowledge in regard to the elimination and spread of the typhoid bacillus and the communicability of typhoid fever. The commission just mentioned rendered a most valuable service in calling attention to the ease with which typhoid fever may be disseminated by other means than infection of water, which, nevertheless, remains the most common origin of sudden, ordinary epidemic outbreaks of the disease. The report[1] of this commission has been published and should be studied carefully by all that are interested in preventing typhoid fever.

Now, the contagiousness of typhoid fever is not to be so understood that the mere presence only of a susceptible person in the vicinity of a typhoid fever patient is dangerous. We know that typhoid bacilli are eliminated from typhoid patients by way of the feces in all cases, by the urine in a large percentage of the cases (at least 25 per cent.), and occasionally by the sputum. Contamination of the surface of the patient himself and of his immediate surroundings, consequently, is practically unavoidable. When little care is used there is the greatest opportunity for wide dissemination of the bacilli by contact. We know that flies may convey the bacilli and deposit them on various substances, including food and drink, in which the germs may multiply. "Fingers, food and flies are the chief means of local propagation. It is impossible for a nurse to avoid finger contamination" (Osler). All hospitals have "house" infections of typhoid fever in physicians, nurses, orderlies, laundry employes, etc., in spite of special precautions, and not a few deaths among house officers have resulted from typhoid so contracted.

It is unquestionably becoming recognized more and more that contact infection is an important means of spreading typhoid fever wherever it breaks out. Thus, Newman, in London, lays great stress on direct infection, the importance of which is emphasized also by F. Klemperer in Berlin. In country communities the spread of the disease when once introduced is often explainable in no other way because here we can not always fall back on a common water or milk supply, and country physicians would do well in publishing observations in point.

In view of the comparative ease with which contact infection may take place, it is rather strange that the doctrine denying case to case contagion should have survived so long. Undoubtedly, this is due to the fact that all the possibilities of direct and indirect contact infection could be fully recognized only as the bacteriology of the disease became fully understood, and much of our knowledge concerning the elimination of typhoid bacilli, their viability outside the body, their conveyance by flies, etc., is recent.

The practitioner should base his prevention of typhoid fever on the fact that it is caused by the typhoid bacillus and that this is eliminated in virulent condition from all typhoid patients in such manner and number as easily to cause infection by contact as well as through water supply. On this account, it is clear that cases of typhoid fever, in the hospital as well as in the home, should be segregated carefully until such time as neither feces nor urine contain bacilli.

1. Report on The Origin and Spread of Typhoid Fever in U. S. Military Camps During the Spanish War of 1898.

THE LESSON OF THE EPIDEMIC.

The hopeful prediction of THE JOURNAL has been fulfilled. The yellow fever epidemic is so nearly at an end that it can safely be said that science has won a distinct victory after one of its greatest battles. The attitude and the effort of the community have been admirable and thoroughly helpful to the enlightened and vigorous course of the officers of the United States Public Health and Marine-Hospital Service. Action along the lines pointed out by the mosquito theory of infection has proved to be absolutely effective. This is demonstrated by comparisons with the epidemic of 1878. The two epidemics were discovered late in July and they ran a very similar course up to three or four days after the beginning of the organized fight this year. Thereafter the cases decreased in 1905 as against a great increase in 1878. In all the South there have been in 1905 less than 9,000 cases and not over 1,000 deaths, while in 1878 in New Orleans alone, with half its present population, there were 4,000 deaths. In 1905 outside New Orleans it has been shown, in town after town, that the epidemic recedes uniformly when there is thorough application of the methods deduced from the mosquito doctrine. Whenever the community has been reluctant to adopt the measures demanded by modern knowledge, there the epidemic has been most severe. If the South will see the lesson and insist on its application, there surely will never be another epidemic of yellow fever in the United States. The medical profession of the south-

ern states faces a great responsibility. In every locality it must teach the lesson of the epidemic and be insistent on the adoption of those precautionary measures that have been proved to be effective and to be absolutely indispensable.

NEWSPAPERS THAT DECEIVE.

The newspapers of the country, as a class, are sufficiently true to the responsibilities of their position in directing the thoughts of the people to make the flagrant exceptions which are frequently noticed to stand out in most unwholesome prominence. Two medical pretenders in Des Moines were allowed to purchase space in the Des Moines newspapers and nothing was published about them except in their approval. The editor of the *Iowa Medical Journal*[1] inquired of a reporter why the arrest of these men on the charge of fraud was not mentioned, and was told that it had been "overlooked." He went to the city editor of the largest daily paper in Des Moines with some facts concerning the case; he was cordially received and was assured that the facts would be published, and that the news columns were not influenced in any way by the advertising department. The next morning not one word appeared in the paper concerning the arrest and trial. On the contrary, there appeared a column article, presumably written by the offenders, and derogatory to the profession of Des Moines. Later, when the courts decided against the fraudulent practitioners, thus putting an end to the possibility of a money income for advertising, the daily press had plenty to say about the "victory achieved in interest of good government," etc. This is one of the glaring offenses against honesty which tend to make the careful reader doubt almost every statement in such a paper. But the newspaper which allows the character of its contents to be influenced by pecuniary considerations is not alone to blame. The public which continues to read such a paper must bear a part of the responsibility.

TREASON AGAINST THE GOVERNMENT.

The New Orleans *American* (sadly misused name) of Oct. 5, 1905, in an editorial, accused the United States Public Health and Marine-Hospital Service of failing to combat successfully the epidemic of yellow fever and of boodling. At this late date it even sneeringly questioned the existence at any time this year of yellow fever in New Orleans. Among other things, it said: "The campaign of the Marine-Hospital Service against the so-called yellow fever is an absolute failure." This "means loss for the many, profits for the few." Then it demands the "expulsion of the boodlers." It is one thing to discuss debatable theories and to expose dishonesty wherever found, but the events of the epidemic can not by any artifice be twisted into any excuse for this offense of the New Orleans paper. To the credit of the press it may be said that few papers have ever approached this depth, for this denotes hopeless depravity. The time is close at hand for the creation by statute of a new variety of treason. If it is treason in time of war for a man to betray his country's military plans, it certainly should be made treason for a man or a publication in time of deadly peril from disease to foment by false allegations public lack of confidence in the government's plan of rescue, and in the integrity and ability of the men who risk their lives to save the community from unnecessary deaths. Than this no treachery can be more base. Physicians, citizens and the reputable press should join in asking stringent penalties for this crime against the nation, against humanity.

1. Iowa Medical Journal, Oct. 15, 1905, p. 415.

ADDITIONAL ALCOHOLIC COMPOUNDS TO BE TAXED.

We commented recently on the Internal Revenue ruling by which compounds which are composed chiefly of distilled spirits are to be classified as alcoholic liquors unless it can be shown by the manufacturer that substances undoubtedly medicinal in their character are used in sufficient quantity to give a medicinal quality to the liquor other than that inherent in the alcohol. A subsequent ruling[1] includes malt extracts in the alcoholic compounds so to be taxed. Further, essences or extracts, such as of lemon, vanilla, etc.—which, being household articles for culinary use—would ordinarily not be included in the ruling, will come under the ruling whenever they are found by the local internal revenue officers to be generally used and sold as beverages, especially in prohibition districts. Thus it is seen that the interpretation of this ruling is broad and yet specific, while at all times fair. Whenever a composition is really used as an intoxicating liquor, it must meet the requirements of law laid down for the sale of liquor.

RIGHTS OF PURCHASERS.

Since every one is a purchaser, directly or indirectly, it is a problem of universal interest as to how one may be sure that the goods purchased at any time or place were prepared for the market so as to be free from disease. In an interesting article[2] on this subject, Mrs. Florence Kelley, secretary of the National Consumers' League, gives an insight into the problem. Goods supposed to have been made in a department store's "own factory" have been found to come from squalid, filthy sweat-shops. It was found to be impossible to depend on the statement of many stores concerning the origin of goods. A woman in the last stages of consumption was found making little boxes for wedding cake, moistening gummed edges with her tongue. A man with tuberculosis, and whose son had an external cancer, earned money by cracking walnuts. A $60 overcoat, supposed to have been made to order by a merchant tailor in Helena, Mont., was really made in an eastern city in a tailor-shop where a case of smallpox existed. Mrs. Kelley remarks: "It would seem an obvious right of the purchaser that the food which he buys at the price asked should be pure and clean; that the garment purchased of an entirely reputable dealer should be free from poisonous dyes, vermin and the germs of disease; and that both food and garments should leave his conscience free from participation in the employment of young children or of sweaters' victims. Yet these seemingly obvious

1. See Medicolegal Department, this issue, p. 1358.
2. Charities, Sept. 30, 1905.

rights were perhaps never farther from attainment than to-day, in the opening years of the twentieth century. Adulteration of foods has never in the history of the human race been carried on on a scale so vast as at present. The sweating-system, with its inevitable accompaniment of filth and disease conveyed in the product, persists and increases in spite of sixty years of effort of the philanthropists and the needle-workers to check it." A few individual inspections of such cases as are referred to in the article will do more to convince one of the way in which the rights of purchasers are ignored than volumes of argument.

Medical News

COLORADO.

Staff for Moffat Road.—Dr. Lewis F. Lemen, assisted by Dr. Hugh L. Taylor, has begun the work of organizing the medical and surgical department of the Moffat system.

Denver to Have Emergency Hospital.—Denver is to build an emergency hospital in a central location, at a cost of $40,000. The new institution will be under the supervision of the city board of health, the commissioner of health being directly in charge.

New Editor.—Dr. J. M. Blaine has resigned as secretary of the Colorado State Medical Society to become editor of *Colorado Medicine*, the official journal of the state society. Dr. Melville Black of Denver succeeds Dr. Blaine as secretary. Dr. Edward Jackson, formerly editor of *Colorado Medicine*, retires from the editorial position, but remains on the publication committee.

CONNECTICUT.

Money for Hospitals.—By the will of Elbert A. Woodward $5,000 is bequeathed to Norwalk Hospital for the endowment of a free bed to be known as the Woodward Fund bed.——The fête recently held for St. Vincent's Hospital, Bridgeport, netted $1,047.52 to the institution.

Infectious Diseases.—During September 27 cases of measles were reported in 10 towns; 88 cases of scarlet fever in 32 towns; 5 cases of cerebrospinal fever in 3 towns; 92 cases of diphtheria in 26 towns; 25 cases of whooping cough in 10 towns; 316 cases of typhoid fever in 58 towns, and 36 cases of consumption in 11 towns.

Personal.—Dr. Charles B. Graves has been elected president and Dr. Abiel W. Nelson a member of the executive committee of the Mainwaring Memorial Hospital, New London.——At the annual meeting of the Litchfield County Hospital Dr. William S. Hulbert, Winsted, was elected a director.——Dr. Charles H. Glover, Norwalk, has been appointed a member of the medical staff of the Connecticut Hospital for the Insane, Middletown.

September Deaths.—During the month of September only 1,195 deaths were reported, 222 less than in the previous month, 26 more than in September of 1904, and 5 less than the average for September during the five preceding years. The mortality was equivalent to an annual rate of 14.5 per 1,000. Infectious diseases were responsible for 196 deaths, or 16.4 per cent. of the total mortality. The chief death causes were: Diarrhea, 150; diseases of the nervous system, 138; consumption, 111; heart disease, 109; accidents and violence, 90; pneumonia and typhoid fever, each 35.

DISTRICT OF COLUMBIA.

Board of Charities Estimate.—The secretary of the Board of Charities has submitted his annual estimate for the next fiscal year to the commissioners of the district. The schedule is less by about $200,000 than that sent in by the Board of Charities last year.

Personal.—Dr. Henry D. Fry is entertaining his guest, Prof. Carl von Noorden of Frankfurt-a-Main, at his residence. A card reception was held October 21 in his honor.—Dr. W. Robert Perkins, formerly resident physician at the Central Dispensary and Emergency Hospital, has returned to the city and taken up his practice.

Health of the District.—The report of the health officer for the week ended October 14 shows the total number of deaths to have been 95, of which number 61 were white and 34 were colored, and 21 stillbirths, of which number 6 were white and 15 colored. The total number of births was 164; whites, 116; colored, 48. There were 27 cases of diphtheria, 10 of scarlet fever, 228 of typhoid fever and 1 of smallpox under treatment at the close of the week.

ILLINOIS.

Hospital Incorporated.—The Graham Hospital Association and Training School for Nurses has been incorporated at Canton by C. F. Everly, M. Addie Dewey and Oscar H. Parks.

Physician Wins Suit.—In the damage suit of Paul F. Kline against Dr. Edgar H. Little, East St. Louis, in which $5,000 was claimed for alleged malpractice in the setting of a broken arm, a verdict was returned October 17 in favor of the defendant.

Diphtheria Closes School.—One of the schools of Ottawa has been closed on acount of the existence of 10 cases of diphtheria among its pupils.——The grade school at Desplaines has been closed on account of diphtheria; 3 cases have been reported, with 1 death.

Personal.—Dr. Arthur F. Comings, Rockford, has retired from the medical profession and will go into business in Sterling.——Dr. Joseph Scheurich, Philo, who was recently shot, is convalescent and has returned to his home.——Dr. Fremont C. Knight, Waukegan, has been appointed chief surgeon of the Chicago & Milwaukee Electric Railroad.

Staff Examination.—More than 300 physicians have signified their intention to the county civil service commission to take the examination for places on the Cook County Hospital staff. The examination opened October 23 and will close November 27. All examinations are being held at the County Hospital. The dates of examinations in the various subjects are as follows:

Oct. 23, Skin diseases; Oct. 26, X-Ray and diseases of the eye, October 30, Diseases of the ear, nose and throat; November 2, Obstetrics; November 6, Diseases of children. November 9, Contagious diseases; November 13, Pathology; Nov; 16, Nervous and mental diseases; November 16, Pathological chemistry; November 20, Medicine (general); November 24, Orthopedic surgery; November 27, Surgery (general).

Chicago.

Hospital Incorporated.—The Ravenswood Hospital has been incorporated with a capital stock of $50,000 to maintain a hospital and training school for nurses by Drs. George W. Green, George M. Bussey and Ernest A. Fetherston.

Personal.—Dr. P. J. H. Farrell has been elected surgeon-general of the Army of the Philippines.——Dr. John E. Owens has been re-elected a trustee of St. Luke's Hospital.——Dr. Carl L. Barnes has gone to California.——Dr. John B. Murphy was given the degree of Doctor of Science at the convocation of the University of Illinois, Champaign, October 2.

Deaths of the Week.—The total deaths from all causes of the week ended October 21 were 466, 11 less than for the previous week and 4 more than for the corresponding week of 1904. The annual death rate per 1,000 was 12.19. Acute intestinal diseases lead in the death causes with 64, followed by consumption with 53; violence, including suicide, with 46; Bright's disease with 45; pneumonia with 44; heart diseases with 32, and cancer with 22.

Gynecological Society Election.—At the annual meeting and dinner of the Chicago Gynecological Society October 20 the guests of honor were Drs. Hunter Robb, Cleveland; Frank Billings and Henry S. Tucker, Chicago, and Matthew D. Mann, Buffalo, N. Y. The following officers were elected: President, Dr. Frank T. Andrews; vice-presidents, Drs. Joseph B. De Lee and Charles E. Paddock; secretary, Dr. Henry F. Lewis; treasurer, Dr. Charles B. Reed; pathologist, Dr. Gustav Kolischer; editor, Dr. Rudolph W. Holmes, and councilor, Dr. Franklin H. Martin.

Evils to be Avoided.—In an address on pneumonia delivered October 19 by Dr. Heman Spalding, he gave the following summary of evils to be avoided and precautions to be taken to keep the vital resistance of the body up to the normal standard:

Drunkenness; foremost among all the habits of mankind that aid in the propagation of the disease. Congested mucous membranes offer ideal soil for the germ.

Overeating; disturbs digestion, interferes with circulation.

Failure to keep mouth and teeth clean; convenient lodging places for the ever present germ are afforded.

Overheated houses make persons too susceptible to outdoor cold; light clothing, including underwear, should be worn indoors.

Breathing through the mouth; bad for many reasons. Frequent baths will keep the skin active and free from effete material.

The Senn Banquet.—A banquet in honor of Dr. Nicholas Senn, professor of surgery, University of Chicago, and surgeon-general of Illinois, will be held at the Auditorium Hotel, November 11, at 6:30 p. m. No personal invitations will be issued, but every one is invited. Tickets for the banquet may be procured from Dr. D. J. Doherty, 100 State Street, Chicago. The price per plate is five dollars. Among the speakers will be Hon. George R. Peck, Dr. W. J. Mayo, Rochester, Minn.; Dr. Charles A. L. Reed, Cincinnati; Dr. Frank Billings, Chicago; Dr. Jacob Lang, Milwaukee, and Dr. John A. Witherspoon, Nashville, Tenn.

IOWA.

Sisters Accept Hospital.—The Sisters of Charity of the Roman Catholic Church have accepted the gift of Mercy Hospital, Webster City, erected at a cost of $35,000 by the late Jacob M. Funk.

Faith Doctor in Jail.—A fine of $300 was imposed on Louis Valeske, New Hampton, who pleaded guilty to an indictment charging him with practicing medicine without a certificate. In default of payment he was committed to the county jail.

Diphtheria Closes Schools.—Grant school, Des Moines, was closed October 10 on account of the prevalence of diphtheria among its pupils.——On October 13 the public schools of Corydon, with the exception of the high school, were closed on account of diphtheria.——The school at Wyaconda has been closed on account of an epidemic of diphtheria.——Moreland reports 30 cases of diphtheria and 1 death.

"Great Paul" Pleads Guilty, Is Fined and Leaves State.—The patent medicine fakir known as "Great Paul," and who was arrested at Fort Madison, charged with practicing medicine without a certificate and who was later indicted by the grand jury, pleaded guilty in the district court, was fined $300 and costs, which he paid and immediately left town. Dr. C. F. Wahrer, the health officer of Fort Madison, took a leading part in ridding the city of this impostor.

Ill and Injured.—Dr. Wilton W. McCarthy, Des Moines, escaped with a bruised right hand from an accident which threatened to be serious. He was running alongside a moving train when he was struck by a car and knocked down, falling almost under the train.——Dr. D. H. Killingsworth, Clarinda, is critically ill.——Dr. Jason Roberts, Osceola, is seriously ill.——Dr. Albert P. Johnson, Sigourney, has so far recovered from his injuries that he is able to attend to business.

Personal.—Dr. John Elliott has resigned as city physician at Mount Pleasant and Dr. Walter A. Sternberg has been elected his successor.——Dr. Henry B. Jennings, Council Bluffs, has returned from abroad.——Dr. and Mrs. William B. La Force, Ottumwa, have returned from Holland.——Dr. John N. Warren, Sioux City, has returned from Europe.——Dr. John F. Ritter, Maquoketa, has returned from a four months' vacation in Virginia.——Dr. and Mrs. Frank B. Whitmore, West Union, sailed for China, October 10.——Dr. Timothy J. Caldwell, Adel, has gone to Fort Bragg, Cal., for the winter.——Dr. William E. Owen and family have returned from a trip to the Pacific Coast.——Dr. Edward M. Arenschield, formerly of South Ottumwa, has located in Glendora, Cal.——Dr. Charles M. Mackin, Independence, has been appointed assistant superintendent of the Clarinda State Hospital.

MARYLAND.

Old Letters.—The University of Maryland monthly, *Old Maryland*, is publishing interesting extracts from the letters of a Baltimore medical student in London during the years 1786 to 1789.—— *Old Maryland* has been made the organ of the University of Maryland Alumni Association.

Society Election.—The University of Maryland Medical Society has elected the following officers for the year: President, Dr. Harry Adler; vice-president, Dr. Fairfax Wright; secretary, Dr. Walter H. Mayhew, and executive committee, Drs. José L. Hirsh, R. L. Mitchell and Charles W. McElfresh.

Baltimore.

Election of Officers.—At the Johns Hopkins Hospital Medical Society Dr. William G. MacCallum was elected president, and Dr. Charles H. Bunting secretary.

Visitors from the Far East.—Dr. Ho Kan Yuen, fleet surgeon Imperial Chinese Navy, Hai Chow; Dr. Tsui Ying Young, surgeon-major Imperial Chinese Army, and Dr. W. P. Chung of the Government Hospital of Chinanfu, spent October 14 in Baltimore.

Will Continue Service.—The supervisors of city charities have decided to continue for 1906 the hospital and dispensary service as maintained in 1905. There are numerous applications from the hospitals and dispensaries all over the city, but besides having worked satisfactorily, the concentration of patients in a few hospitals allows a better oversight and inspection of patients and institutions.

Personal.—Dr. James G. Iglehart has been re-elected president of the Sons of the American Revolution in Maryland.—— The vacancy caused by the death of Prof. Charles Schmidt, at the University of Maryland, will be filled temporarily by Prof. Charles Caspari, Jr.——Dr. Hugh Warren Brent has settled for practice in Baltimore.——Dr. William T. Watson has recovered from an operation for appendicitis.——Dr. Archibald W. Graham has been appointed assistant resident physician of Bayview Hospital, vice Dr. William W. Riha, made assistant physician at Danvers Insane Hospital, Hawthorne, Mass.

MASSACHUSETTS.

Home Dedicated.—The new convalescent home of the Children's Hospital, Boston, which is located in Wellesley, was dedicated by Rt.-Rev. William Lawrence, D.D., October 24, and opened for use.

Adulterators Punished.—Twelve milk dealers in Boston and one vinegar manufacturer were recently fined $10 each for adulterating. The vinegar man only a few weeks ago lectured in his native town on "The Dangers of Adulterated Foods."

Harvard Opening.—Harvard Medical School starts off with 13 graduate, 68 fourth-year, 65 third-year, 59 second-year and 76 first-year, students. This is a decrease of 8 from last year, but an increase in the first-year class of 10. Each of the other classes is smaller than it was last year.

Personal.—Dr. Anthyme S. Menard, the most prominent French physician in Holyoke, was seriously injured October 19 by a horse which became frightened at his automobile and fell into it, crushing him against the steering wheel.——Dr. Atwood R. Wood, Worcester, Mass., has been appointed superintendent of the Michigan Asylum for the Insane, Kalamazoo.

Hospital Concerts.—The November concerts of the Hospital Music Fund announced by Dr. John Dixwell are: November 4, Boston Insane Hospital; November 5, Somerville Hospital; November 8, Soldiers' Home; November 12, United States Naval Hospital; November 19, United States Marine Hospital; November 26, Boston Home for Incurables, and November 30, Massachusetts General Hospital.

Boston Medical Library Program.—The Boston Medical Library meetings are to be resumed October 28. As last winter, they are to be held in conjunction with the Suffolk District Branch of the Massachusetts Medical Society, at the Medical Library, on the Fenway, at 8:15 p. m. Light refreshments will be served at the end of each meeting. Twelve meetings are planned. The following is a preliminary program:

October 28: Semi-annual meeting of the Suffolk District Branch of Massachusetts Medical Society. The Committee on Tuberculosis will make a report on progress through Dr. Henry Jackson. "The Treatment of Surgical Tuberculosis in Children," by Dr. Edward H. Bradford. "The Duty of the City Toward Tuberculosis," by Prof. William T. Councilman. "The Home Sanitarium Treatment of Tuberculosis," by Dr. Joseph H. Pratt.

November 15: Moving pictures showing galts, spasms and convulsions, Dr. Walter B. Chase, Brookline. Demonstrations with the Reflectoscope.

December 6: Surgical meeting. Subject of meeting will be announced later.

December 20: The milk supply of large cities. The program for this meeting has been arranged by Dr. Charles Harrington, secretary of the Massachusetts State Board of Health, who has invited speakers from other cities.

January 3: "Recent Advances in Physiology Bearing on Clinical Medicine," Prof. William T. Porter, Prof. Walter B. Cannon, Prof. Howell of Johns Hopkins.

January 24: "Surgery of the Peripheral Nerves," Dr. John B. Murphy, Chicago.

February 14: "The Military Hygiene of the Japanese Army," Captain Charles Lynch, United States Army.

February 28: "Secret Nostrums," Dr. Frank Billings, Chicago.

March 14: Surgical meeting. Subject to be selected by Dr. Joseph A. Blake, New York.

March 28: "The Treatment of Heart Disease." *a*, "The Use of Depletion," Dr. Frederick C. Shattuck; *b*, "The Use and Abuse of Digitalis," Dr. Franz Pfaff; *c*, "Pneumatic Differentiation," Dr. Charles E. Quimby, New York; *d*, "The Nauheim Treatment," Dr. Francis B. Kinnicutt, New York.

April 11: "Pyloroplasty and Gastroenterostomy," by Dr. J. N. T. Finney, Baltimore.

April 28: Semi-Annual Meeting of the Suffolk District Branch of Massachusetts Medical Society. Paper by Dr. Guy G. Fernald, Waverly, of the Massachusetts School for Feeble-Minded.

NEW JERSEY.

Physician Left Fortune.—Dr. Frank L. Horning, Camden, has fallen heir to about $50,000 by the death of an uncle in Schuylkill County.

Appropriation for School Inspection.—The city council of Montclair has made an appropriation of $1,000 for medical inspection of schools.

Accidents.—Dr. William H. Pratt, Camden, narrowly escaped serious injury when his carriage was struck by a train October 11.——Dr. Alexander McAlister, Camden, was thrown from his carriage October 14 and seriously injured.

Hospital Elects Officers.—At a meeting of the board of directors of the Essex Private Hospital, Newark, Dr. John Dennis was elected president; Dr. Herbert W. Long, secretary; Dr. Theodore Teimer, treasurer; Dr. William O. Bailey, chairman of the executive committee, and Dr. William Buermann, chairman of the finance committee.

Hospital Staff Selected.—The board of governors of the Atlantic City Hospital has elected the following medical staff to serve one year from November 1: Drs. W. Blair Stewart, Elisha C. Chew, Theodore Senseman, Emery Marville, Edgar Darnell, A. Burton Shimer, Walt P. Conaway, J. Addison Joy, William M. Pollard, William H. Bennett and Joseph C. Marshall. Dr. Charles K. Mills, Philadelphia, was appointed consulting physician and Dr. W. F. Ridgeway pathologist of the hospital.

Personal.—Dr. and Mrs. C. D. Martinetti, Orange, sailed for Europe October 21 on the *Fuerst Bismarck.*——Dr. Katherine Porter, Orange, has returned from abroad.——Dr. Sidney C. Keller, Paterson, has been appointed a member of the resident staff of St. Elizabeth's Hospital, Utica, N. Y.——Drs. William A. Clark and Nelson B. Oliphant, Trenton, have returned from abroad.——Dr. Arthur H. Dundon, Plainfield, has been appointed registrar of vital statistics.——Dr. Immanuel Pyle, Jersey City, has been appointed successor to Dr. Stephen V. W. Stout on the staff of the City Hospital.——Dr. Dennis R. McElhinney, Elizabeth, has been appointed city physician vice Dr. George W. McCallion, deceased.——Dr. A. Haines Lippincott, Camden, has returned from a trip to Yellowstone Park and the Pacific Coast.——Dr. and Mrs. George W. Shera, Jersey City, have returned from a tour of the Great Lakes.——Dr. Talbot R. Chambers and family, Jersey City, have returned from Europe.

NEW YORK.

Hospital Opened.—The new Corning Hospital was opened to the public in connection with a donation party October 7.

Diphtheria at Oxford.—On account of the spread of diphtheria the Oxford schools were ordered closed October 11 for at least two weeks.

Medical Society Centennial.—The Washington County Medical Society celebrated its centennial at Sandy Hill October 3, 25 members being present.

Isolation Pavilion a Reality.—The woman's board of St. James' Mercy Hospital, Cornellsville, has raised a fund of $2,000 for the erection of an isolation pavilion, or $100 more than is required for the purpose.

Clerk of Health Department Removed.—Thomas Stuart, who has been chief clerk of the State Health Department for thirteen years, has been removed from office by the state health commissioner. It is claimed that this change was demanded for political reasons.

District Attorney Praised.—Drs. Henry R. Hopkins, Ernest Wende and Herman Hayd, Buffalo, give unstinted praise to Mr. Frank A. Abbott, first assistant district attorney, for his ability and the tenacity of his efforts to rid Erie County of the medical quacks and charlatans with which it has been infested for twenty years.

Cornerstone Laid.—The cornerstone of the new building for the Providence Retreat, Buffalo, was laid with appropriate ceremonies by Bishop Coulton, October 7. The institution is expected to be one of the finest in the United States for the care of the insane, will accommodate 186 patients and will cost about $300,000.

Hospital Loses Bequest.—In the suit of Edward Rosenbaum against Andrew Turnbull, executor under the will of Mary Rosenbaum, to break the latter's will, the Supreme Court decided in favor of the plaintiff. By this decision the German Hospital, Buffalo, loses the estate valued at $40,000, which was willed to it by Mrs. Rosenbaum.

Convalescent Home Opened.—St. Elizabeth Home for Convalescents at Spring Valley, Rockland County, was opened with impressive ceremonies by the Rt.-Rev. T. F. Cusack, auxiliary bishop of New York, September 14. The institution will accommodate 35 patients and will be open to persons of all denominations.

Library Association Election.—The Utica Library Medical Association held its annual meeting October 2, at which the following officers were elected: President, Dr. Thomas H. Farrel, Utica; vice-president, Dr. B. Pemberton Allen, Oriskany; secretary, Dr. Fred W. Smith, Utica; treasurer, Dr. James H. Glass, Utica, and librarian, Dr. Smith Baker, Utica.

Colleges Opened.—The Albany Medical College opened for its seventy-fourth session October 19, Dr. Albert Vander Veer delivering the introductory address. Dr. Holmes C. Jackson has been placed in charge of the physiologic laboratory and Dr. G. E. Bielby will assist in the department of histology. Dr. E. V. Fredericks has been made assistant in clinical microscopy, and Dr. C. Lannahan assistant in dermatology.——The sixtieth annual session of the medical department of the University of Buffalo opened September 25 with an address by Dr. George F. Cott.

New York Brought to Terms.—The strained relations which existed between the medical authorities of New York and New Jersey, which culminated in the recent action of the New Jersey authorities compelling New York physicians to submit to a New Jersey examination before practicing in that state and which was in retaliation for a similar restriction previously imposed by New York, have come to an end. At a conference of the representatives of the medical societies of the two states it was agreed that after Jan. 1, 1906, the authorities of each state should recognize medical certificates issued by the other state.

Personal.—Dr. Lucius B. Parmlee, Batavia, is spending the winter in Pasadena, Cal.——Dr. Mary O'Malley, Binghamton, has been appointed a member of the medical staff of the Government Hospital for the Insane, Washington, D. C.——Dr. Charles W. Chapin, Georgetown, has been appointed junior physician at the Manhattan State Hospital.——Drs. Harold G. Levy, Samuel H. Rosenthal, Arthur M. Johnson, Michael Casey and Edwin V. Rose have been appointed city physicians at Rochester.——Dr. William E. Silecocks, Green Island, who has been under treatment for appendicitis at Troy Hospital, has returned home.——Dr. Horace P. Pritchard, Cicero, has been made house surgeon at St. Joseph's Hospital, Syracuse; Dr. Maxwell Montgomery, house physician; Dr. Frank E. Eustin, assistant house surgeon, and Dr. Otto Weiscotten, ambulance surgeon.——Dr. Charles H. Langdon, assistant superintendent of the Hudson River Hospital, Poughkeepsie, was operated on for appendicitis October 3.

New York City.

Insane Transferred.—Fifty female insane patients were transferred from the Manhattan State Hospital to the Binghamton State Hospital October 11.

Hospital Sold.—The lot of ground on which is situated the old Harlem Hospital and the pier used by the city for its ferry to Randall's Island has been sold.

College Opens.—The sixty-fifth year of the New York University Medical Department opened October 4. The opening addresses were made by the dean, Egbert Le Fevre, and Chancellor McCracken.

Another Ambulance Accident.—An ambulance from St. John's Hospital, Brooklyn, was struck by a Marcy Avenue car at Bergen Street and Classon Avenue. This is the tenth ambulance accident in Brooklyn since Memorial Day.

Gift to Sanatorium.—Mr. Jacob H. Schiff, the banker, has given $10,000 to the sanatorium for Hebrew children, Rockaway Park, conditional on the raising of the balance of $25,000 necessary to complete the fund for the erection of a large wing to the sanatorium.

Hospital Dedicated.—The new Washington Heights Hospital, which was opened August 1, was formally dedicated October 15. The hospital is a two-story stone structure. There are at present 32 beds and 12 more will shortly be added. The institution is non-sectarian and will meet the needs of all classes in that district.

Milk Dealers Fined.—A fine of $200, with an alternative of thirty days' imprisonment, was imposed on a wholesale milk dealer in the Court of Special Sessions. It was the fourth offense of which the dealer had been convicted. He was warned that the next time the punishment would be imprisonment in addition to the fine. A number of small dealers were also fined.

Pollution of the Water Supply.—The City Club, corroborating the statements made in the papers in regard to the pollution of the water supply at Mount Kisco, and suggesting as a remedy the condemnation of additional land in that place, has

sent a letter to Mayor McClellan urging that immediate action be taken to correct the present abuses, which render water very dangerous.

Lowest Death Rate on Record.—It was announced at the Health Department that the death rate for the week ended October 14 was equivalent to an annual rate of 15.53, as compared with 15.64 for the same week of last year. If figured on actual population instead of the 1900 census, this would be the lowest death rate on record at the Health Department.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended October 14, 302 cases of tuberculosis, with 141 deaths; 219 cases of diphtheria, with 19 deaths; 124 cases of typhoid fever, with 20 deaths; 81 cases of measles, with 5 deaths; 69 cases of scarlet fever, with 4 deaths; 4 cases of cerebrospinal meningitis, with 9 deaths, and 55 cases of varicella.

Personal.—Dr. James F. Donnelly has started for Russia to study cholera and plague.——Dr. H. L. Barnes, Brooklyn, has been appointed superintendent of the State Sanatorium for Tuberculosis, Providence, R. I.——Dr. and Mrs. Florian Krung have returned from Europe.——Dr. Charles T. Schondelmeier has been re-elected president of the Long Island Throat Hospital and Eye Infirmary, Brooklyn.——Dr. Julian Dean was elected a trustee of the institution.

NORTH CAROLINA.

Hospital Opened.—The private hospital of Dr. David T. Tayloe, located near his home in Washington, was opened with appropriate exercises week before last.

Sentenced for Fraud.—Dr. M. Avery, Salisbury, who was heavily fined in the Federal Court for frauds against the government and sentenced to three months in jail, was taken to Salisbury October 7 to serve his jail sentence.

Physicians Prescribe Whisky.—The recorder of Charlotte has inaugurated a campaign against physicians who give indiscriminate prescriptions for liquor. He says that four of the physicians of the city are issuing more prescriptions than the other forty physicians of the city combined.

Medical Schools Opened.—The University of North Carolina Medical Department, Raleigh, opened for its annual session September 14 with an address by Dr. Hubert A. Ryster, dean of the faculty. Dr. Ralph S. Stevens has been added to the faculty as lecturer on pathology.——North Carolina Medical College opened October 3 with an address by Dr. Isaac W. Faison, Charlotte, dean of the faculty.

Ethics in a Nutshell.—The Cumberland Valley Medical Society recently enjoyed a most delightful outing at the country home of Dr. Thomas D. Haigh, one of its veteran members. Picnic refreshments were served and the society entertained and instructed by an address from Dr. Haigh emphasizing the importance of high ideals in the professional life and suggesting that after all the talk about medical ethics the whole scheme is included in the thought and actions of a medical gentleman.

Personal.—Dr. J. Howell Way, secretary of the Medical Society of North Carolina, has returned to his work at Waynesville after a brief vacation spent in the hospitals of New York.——Dr. Edward C. Register, Charlotte, has returned to his home after an extended tour of Europe.——Dr. Richard H. Whitehead, for ten years professor of anatomy in the University of North Carolina at Chapel Hill, is leaving the state to assume the duties of the chair of anatomy in the University of Virginia, to which he was recently elected.——Dr. Robert L. Gibbon, Charlotte, has been elected medical director of the Conservative Mutual Life Insurance Company of that place.

OHIO.

The Afflicted.—Dr. John W. Murphy, Cincinnati, is seriously ill with what is believed to be an abscess of the frontal sinus.

Donation Day.—More than $1,000 was contributed to the German Deaconess Home and Hospital, Cincinnati, at its annual donation day, October 12.

New Dispensary Opened.—The medical and pharmacal departments of Toledo University opened a free clinic and dispensary October 16 at the college building.

Personal.—Dr. Reber F. Quigley, Vermillion, has returned from the Pacific Coast.——Dr. D. C. Clark Hoffman, Dayton, chief surgeon at the Soldiers' Home, has resigned.

Diphtheria Epidemic.—Leetonia is experiencing a scourge of diphtheria which is increasing with such rapidity that the Board of Health has ordered the schools closed until further notice.

Lancet-Clinic Incorporates.—The Lancet-Clinic Company of Cincinnati was incorporated October 16 with a capital stock of $100,000 by Drs. James C. Culbertson, William Ingram, William H. Falls, William D. Haines and Rufus B. Hall, all of Cincinnati.

Physician Vindicated.—Dr. Henry F. Kattenhorn, Cincinnati, who was sued by Ella Doty in 1902 for damages on the charge of having negligently treated a fracture of the arm, was given judgment October 13, as it was shown that the bone alleged to have been broken was not broken, and the one which was broken had been properly treated by the defendant.

PENNSYLVANIA.

New Hospital.—The old Mills homestead, Braddock, is being remodeled as a hospital at a cost of about $7,000.

Practice Without License.—"Dr." Densen, Scranton, convicted of practicing medicine without license, was sentenced to pay a fine of $200 and in default was committed to jail.

Annex for Hospital.—The board of directors for the Mercy Hospital, Pittsburg, decided on the erection of a three-story addition to the hospital, to cost $50,000 and to contain operating rooms, a free dispensary and an amphitheater.

State Hospital Staff Elected.—Dr. Joseph Thomas, Quakertown, has been re-elected president of the board of trustees of the State Hospital for the Insane, Norristown. Dr. Julia Harden, Philadelphia, was elected assistant resident superintendent, and Drs. D. Richardson and Mary M. Wolfe were re-elected to the medical staff.

Help Hospitals.—The Sewickley Af-Fair netted $4,000 to the Sewickley Hospital.——The late Robert L. Shetter, York, devised $5,000 to be used for the endowment of a bed in the Methodist Episcopal Hospital, Philadelphia.——Mrs. Mary L. Baer, Lancaster, has given the Lancaster General Hospital $10,000 for the endowment of a bed in memory of her husband, the late Reuben L. Baer.

Guilty of Malpractice.—In the case of Dr. W. A. Cochran, Easton, charged with criminal malpractice on Miss Lizzie Trader, Phillipsburg, the defendant was found guilty, and is reported to have fled to Canada.——Dr. Edwin S. Cooper, New Castle, charged with conspiring to perform a criminal operation on Miss Mabel Williams of Johnstown, was found guilty September 13. Dr. Cooper was convicted on the same charge two years ago and sentenced to two years' imprisonment, but was granted a new trial.

Personal.—Dr. William R. Palmer, Johnsonburg, was operated on for appendicitis at the Elk County General Hospital September 14.——Dr. John C. Greenewalt, Chambersburg, was thrown from his horse September 24 and dislocated his shoulder.——Dr. Thomas T. Zerbe, Schaefferstown, fell September 19 and fractured a rib.——Dr. A. Barr Snively, Waynesboro, was thrown from his buggy September 17 and fractured several ribs.——Dr. and Mrs. S. Louis Zeigler, Reading, have returned after a three months' tour of Europe.——Dr. Albert C. Snider, White Haven, has been appointed local surgeon for the Lehigh Valley Railway vice Dr. S. Wilson Trimmer, deceased.——Dr. Edward A. Weiss, Pittsburg, was held up and robbed October 2 for the third time in three months.——Dr. Cameron Shultz, Danville, has been commissioned first lieutenant and assistant surgeon, N. G. Pa., and assigned to the Twelfth Infantry.——Dr. Alfred J. Yost, mayor of Allentown, left October 5 for the Pacific Coast.——Dr. William P. Burdick has been appointed surgeon for the B., R. & P. Railroad at Mount Jewett, and Dr. William J. Fredericks oculist for the company at Bradford.——Dr. Elizabeth McLaughry, New Castle, has sailed for Europe.——Dr. Milton Goldsmith and wife, Pittsburg, have returned from Europe.——Dr. Samuel S. Apple, Easton, has suffered the loss of his wife, who died from valvular heart disease October 9, aged 65.

Philadelphia.

College Opens.—The Women's Medical College opened September 27 for its fifty-fifth year.

Von Noorden Entertained.—Prof. Dr. Carl von Noorden, Frankfurt, Germany, was entertained by the Medical Club of Philadelphia, October 25.

Martin Resigns.—Dr. Edward Martin, director of the Department of Public Health and Charities, has resigned. In his letter to the mayor he assigns as reason that the "times are too strenuous."

Coroner's Physician Fined.—Dr. William S. Wadsworth, a coroner's physician, who was a witness in a criminal case, was fined $25 and costs for being late in returning to court after recess. The fine was promptly paid.

Charge Unfounded.—After two hearings Dr. Charles Conrad, who had been arraigned on the charge of conducting a disorderly house, was discharged, the prosecution having been shown to have no foundation in fact.

Chinese Visitors.—Drs. Ho Kan Yuen, fleet surgeon in the Imperial Chinese Navy; Tsui Ying Young, surgeon major in the Imperial Chinese Army, and W. P. Chung of the government hospital service, recently visited Philadelphia.

Suffer for Breaking Laws.—Dr. Thomas Wallace was convicted on September 20 of using the mails for advertising medicine for illegal purposes and was sentenced to pay $100 fine and to serve nine months in the county prison.——Minnie Tilburn pleaded guilty September 28 to performing a criminal operation on Lillia Rentfer and was sentenced to two years in the county prison.

Health Report.—The deaths reported from all causes during the week ended October 21 numbered 308. This is an increase of 30 over the number reported for the previous week, and an increase of 18 over the number for the corresponding period of last year. The principal causes of death were: Typhoid fever, 7; diphtheria, 6; tuberculosis, 42; cancer, 23; apoplexy, 24; heart disease, 42; acute respiratory disease, 32; enteritis (under 2 years), 29; enteritis (over 2 years), 8; appendicitis, 5; Bright's disease, 35; suicide, 3, and accidents, 15. There were 212 cases of contagious disease with 16 deaths, as compared with 171 cases and 12 deaths for the previous week.

Bequests to Charity.—The will of the late John Alter, who died in August last in Vichy, France, devises $50,000 to Jefferson Hospital for the erection of a John Joseph Alter memorial in that institution. The trustees are to decide what kind of a memorial would be most suitable. Bequests of $5,000 are also made for the endowment of two free beds in the above named hospital, together with two beds endowed for $10,000 in the University Hospital.——By the will of the late Susan C. Whelan the Maternity Hospital receives $500.——By the will of the late David Teller the Jewish Hospital Association of Philadelphia receives $200, and the Jewish Foster Home and Orphan Asylum a like sum.——By the will of the late Mrs. Frances E. Loeb the Jewish Hospital Association and the Jewish Maternity receive $500 each.

Portrait of Dr. Coxe Presented to the University.—An oil portrait of Dr. John Rodman Coxe, one of Philadelphia's earliest and most famous physicians, was presented to the department of medicine of the University of Pennsylvania October 20. The presentation was made at the home of Dr. Roland G. Curtin by Dr. Richard A. Cleeman, in behalf of J. Rodman Coxe, a grandson. Dr. Coxe was born in Trenton, N. J., Sept. 16, 1773. In 1790 he began a four years' course of study under Dr. Benjamin Rush. He was port physician in 1798, for five years was connected with the Pennsylvania Hospital, and was also a physician at the Philadelphia Dispensary. In 1809 he was professor of chemistry in the University of Pennsylvania, and from 1818 to 1835 he was professor of materia medica and pharmacy in the same institution. He was a trustee of the university and one of the founders of the Philadelphia College of Pharmacy. The presentation was given added interest by the meeting of the Historical Club of the department of medicine of the University of Pennsylvania at the same time.

Personal.—Dr. Frank W. Talley was thrown out of an automobile in a collision at Allentown September 24 and seriously bruised.——Dr. William H. Semple was seized with hemorrhages while riding on a street car September 16 and is critically ill at the Medico-Chirurgical Hospital.——Dr. Heatley C. Dulles has returned from Europe.——Dr. Judson Deland has returned from a visit to India, where he has been making an especial study of tropical diseases.——Dr. M. Frank Kirkbride and family sailed for Naples October 15.——Dr. Nathan F. Mossell was re-elected medical director and chief of staff of the Frederick Douglass Memorial Hospital. At a meeting of the board of directors it was decided that the election, at a previous meeting, of Dr. P. C. Howard to succeed Dr. Mossell was illegal.——Dr. W. H. F. Addison of the University of Toronto has been appointed demonstrator of histology in the department of medicine of the University of Pennsylvania.——Dr. Francis J. Higgins has been appointed on the out-patient surgical staff of St. Joseph's Hospital.——Dr. Mortimer Herzberg, University of Pennsylvania, 1902, was one of two successful candidates for the positions of assistant bacteriologists of the bureau of health at a recent civil service examination.

SOUTH CAROLINA.

College Opens.—The Medical College of the State of South Carolina, Charleston, opened for its annual session October 2. Dr. Francis L. Parker, the dean, delivered the opening address.

An Ethical Rule.—The Columbia Medical Society has passed a rule strongly condemning the publication of names of any of its members in professional items or news.

Personal.—Dr. Lewis A. Griffith, Columbia, has been elected chairman of the local board of health, vice Dr. E. C. McGregor, resigned. Dr. McGregor was elected vice-chairman of the board.——Dr. David B. Frontis, Ridge Spring, was recently thrown from his buggy in a runaway accident and painfully hurt.——Dr. W. W. Fennell, Rock Hill, has purchased the stock of the other physicians interested in the Rock Hill Hospital.

TENNESSEE.

Graduation Exercises.—The commencement of the medical department of the University of the South, Sewanee, held its annual commencement exercises October 26, when a class of 27 was graduated.

East Tennessee Medical Society.—The fifteenth annual meeting of the East Tennessee Medical Society was held in Bristol September 29. Dr. Charles J. Broyles, Johnson City, was elected president; Dr. Claude P. Fox, Greenville; A. G. Kern, Knoxville, and William A. Dietrich, Chattanooga, vice-presidents, and William M. Copenhaver, Bristol, secretary. The society will meet in Johnson City next year.

Personal.—Dr. John R. Biust, Nashville, was recently operated on for appendicitis at Rochester, Minn.——Dr. James G. Haywood, Memphis, is critically ill.——Drs. John A. and H. C. Murphy, Bristol, have started for California.——Dr. Benjamin B. Cates, Knoxville, has been seriously ill with septicemia.——Dr. James H. McCall, United States Army, has been made a member of the faculty of the medical department of Vanderbilt University, Nashville.

Colleges Opened.—The medical department of Vanderbilt University opened October 2 with addresses by the Rev. G. W. Bull and Dr. G. Chris. Savage.——At the opening exercises of the medical department of the University of Nashville, October 2, Dr. Sidney S. Crockett presided and Dr. R. L. C. White delivered the address of welcome.——The medical department of the University of Tennessee, Nashville, opened for the year October 2 with addresses by the mayor of Nashville and Dr. S. A. Medors, dean of the dental department.

TEXAS.

Operated on for Appendicitis.—Dr. Benjamin M. Warsham, Austin, who was recently operated on for appendicitis in New York City, is making favorable progress toward recovery.——Dr. F. P. Seymour, Beeville, who was recently operated on for appendicitis, has returned to his home.

School Inspection.—The individual medical inspection of the pupils of the city schools of Dallas was inaugurated October 2 by Drs. Robert S. Yancey, Scurry L. Terrell, W. E. Howard, Theo. L. E. Arnold, Martin E. Taber, Frank J. Hall, Benjamin R. Bluitt, Richard T. Hamilton and Edward H. Carey.

Executive Committee Meeting.—The executive committee of the State Medical Association met at Fort Worth October 3 to prepare for the reception and entertainment of Dr. J. N. McCormack, chairman of the Organization Committee of the American Medical Association, who reaches El Paso October 30, and who will make a tour of the state, visiting the various medical societies.

Personal.—Dr. John S. Carter, Denison, is ill with rheumatism.——Dr. James E. Dodson, Vernon, suffered a dislocation of the patella and serious lacerated and contused wounds in a runaway accident September 29.——Dr. Andrew W. Duke, Center, while driving a few miles from town was thrown from his buggy and rendered unconscious for a short time.——Dr. Charles W. Griffith, La Porte, has returned from the Pacific Coast.——Dr. John W. Vermillion, Silverton, has moved to Texhoma, Okla.

Medical Schools Opened.—The fifteenth annual session of the medical department of the State University of Texas, Galveston, began October 2. The opening address was delivered by Dr. William S. Carter, dean of the institution. Dr. M. L. Graves has succeeded to the chair of medicine, vice Dr. James W. McLaughlin, resigned.——The Southwestern University Medical College, Dallas, opened for the first term in its new building October 2.——Baylor University College of Medicine, Dallas, held its opening exercises October 2. The term has been extended from six months to seven months, and entrance requirements have also been increased.——The medical department of Fort Worth University opened for the year September 26. The opening address was delivered by Dr. Frank Gray, dean of the institution.

VERMONT.

Personal.—Dr. Henry D. Holton, Brattleboro, has succeeded Dr. Don D. Grout, Waterbury, as a member of the state tuberculosis commission, and was elected chairman of the commission.

Change in Journal Management.—The *Vermont Medical Monthly* will hereafter be conducted by the following board: Dr. Bingham H. Stone, editor-in-chief; Dr. Henry C. Tinkham, Dr. Charles F. Dalton and Prof. H. L. White, all of Burlington.

Must be Relicensed.—Seventy-eight physicians from different sections of the state, who have been practicing without having their licenses recorded, have been summoned before the state medical board for examination. Included in this number are physicians who have been in practice thirty years, and three of those summoned are members of the faculty of the medical department of the University of Vermont. This action on the part of the board was made necessary by the provisions of a law passed by the legislature in 1904.

State Society Meeting.—The Vermont State Medical Society held its ninety-second annual meeting in Burlington October 12-13, the president, Dr. Patrick E. McSweeney, Burlington, in the chair. The presidential address was on a technical subject, "Tumors Complicating Pregnancy," and the address of the first vice-president was on the subject "The Physician as an Educator." The election of officers resulted as follows: President, Dr. Myron L. Chandler, Barre; vice-president, Dr. Elmore S. Allbee, Bellows Falls; secretary, Dr. George H. Gorham, Bellows Falls; treasurer, Dr. Brigham H. Stone, Burlington; auditor, Dr. John H. Blodgett, Saxton's River; executive committee, Drs. Myron L. Chandler, Bellows Falls; George C. Gorham, Bellows Falls, and Henry C. Tinkham, Burlington; committee on publication, Drs. George C. Gorham, Bellows Falls; George R. Anderson, Brattleboro, and Clarence Beecher, Burlington; committee on legislation, Drs. Arthur B. Bisbee, Montpelier, and Henry D. Holton, Brattleboro; delegate to American Medical Association, Dr. Carroll B. Ross, West Rutland. A resolution regarding uniformity in fees for physicians was discussed, but no action was taken on it. Resolutions were adopted eulogizing Senator Proctor for his gift of the establishment of a tuberculosis sanatorium, and requesting him to allow his name to be used in connection with the institution. The next meeting of the society will be held in Barre.

VIRGINIA.

Must Report Contagious Diseases.—Failure on the part of many Richmond physicians to comply with the ordinance requiring them to report to the Board of Health the existence of all cases of contagious diseases has compelled the board to instruct the health committee to enforce the rule in this regard.

Personal.—Dr. Stuart McGuire appeared for the first time as president of the University College of Medicine at Richmond at the mass meeting of students October 5.——Drs. W. Levi Old and Israel Brown, Norfolk, returned from Europe October 12.——Dr. Marvin P. Rucker, Manchester, has returned from Europe.

Union of Colleges.—Plans for the consolidation of the Medical College of Virginia, Richmond, and the medical department of the University of Virginia, Charlottesville, were discussed by the board of visitors October 6.——Dr. George Ben Johnston of the Medical College of Virginia, Richmond, was elected professor of surgery in the medical department of the university, to succeed Dr. J. H. Buckmaster, resigned, and was also made chief of the staff.

WASHINGTON.

Washington State Medical Association Grateful.—The following is an extract from the proceedings of the seventeenth annual session of this association, held in Tacoma, September 25-27:

Dr. Semple said: "We have been greatly indebted to the American Medical Association and to Dr. McCormack, who has given his time and talents to assist us in helping ourselves, and I therefore move that the thanks of the Washington State Medical Association be tendered to the American Medical Association for their assistance to us, and Dr. J. N. McCormack for his able and masterly address, giving us his experiences in organizing our profession, advising us of proper methods to increase our influence, better our position and solve the many questions that confront us."

The motion was duly seconded and carried.

WEST VIRGINIA.

Fire Damage.—Fire at Germania September 25, supposed to be of incendiary origin, destroyed the house and office of Dr. W. G. Drinkwater.

Fined for Prescribing Liquor.—In the case of Dr. Walter L. Leach, Rivesville, charged with illegally issuing a prescription for whisky, the defendant was found guilty and was sentenced to pay a fine of $50.

Not Guilty.—The charges against Dr. Albert H. Kunst, superintendent of the West Virginia Hospital for the Insane, Weston, were proven on investigation to be absolutely without foundation, but Dr. Kunst has handed his resignation to the board of directors, to become effective January 1.

WISCONSIN.

Addition to Hospital.—The extensive addition to the Deaconess Mother House of the Milwaukee Hospital has been completed. The building will be used for offices, assembly rooms and dormitories.

Little Contagious Disease.—The Milwaukee Isolation Hospital is empty; since June there have been 215 cases of smallpox, with 1 death. The city is reported to be unusually free from communicable diseases.

Jail for Spitters.—An ordinance introduced in the Sheboygan city council October 17 provides a jail sentence for violations of the anti-spitting law, and owners of theaters and public halls are notified to provide sufficient cuspidors or suffer penalty.

College Opens.—The Milwaukee Medical College opened for its twelfth annual session October 3. The opening address was made Dr. William H. Earles, president of the institution. Dr. E. L. Bullard has been made professor of nervous and mental diseases.

Personal.—Dr. J. Fremont Corbett and wife, Weyauwega, have moved to Southern California.——Dr. Daniel W. Lynch, West Bend, and Dr. Grove Harkness, Waukesha, have returned from the Pacific Coast.——Dr. and Mrs. Arthur J. Patek have returned after a summer in the Adirondacks.

Chiropractic Fined.—In the case of the state of Wisconsin against G. W. Johnson, La Crosse, for practicing medicine without a state license, the court found that the defendant had not treated patients. The case against him was, therefore, dismissed and a warrant issued for his partner, E. J. Whipple, on whom devolved the duty of treating patients. Whipple was found guilty October 12 of practicing medicine without a license and was sentenced to pay a fine of $50 and costs, making the total judgment about $100. The defendant asserts that he will appeal the case.

GENERAL.

Experiments with the Milk of Malta Goats.—It is reported that the Department of Agriculture is to experiment in typhoid fever with the milk of goats recently imported from Malta. The goats were subjected to a rigorous quarantine and have been carefuly inspected to determine their freedom from Malta fever.

Cholera in the Philippines.—A cable report from the Philippines states that cholera is practically wiped out. From August 23 to October 14 there were 713 cases and 553 deaths. In Manila the cases and deaths are thus classified: Americans, 11 cases and 6 deaths; Filipinos, 180 cases, 162 deaths; foreigners, 19 cases, 15 deaths; Chinese, 4 cases and 4 deaths.

Physician for Indian Service.—The United States Civil Service Commission announces an examination Nov. 22, 1905, to secure eligibles from which to fill a vacancy in the position of physician (male), at $1,000 per annum, San Juan Indian Agency, N. Mex.; another, at $900 per annum, at Fort Bidwell, Cal., and similar vacancies as they may occur in the Indian service. As the commission has experienced considerable difficulty in securing eligibles for this position, but five having been secured as the result of the examination held on Sept. 13, 1905, qualified persons are urged to enter this examination. This examination is open to all male citizens of the United States between the ages of 25 and 55. Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of any civil service board of examiners, for application form 1312.

Yellow Fever News.—Except at Pensacola the epidemic is practically at an end.——At New Orleans there was a final general fumigation on October 15.——The steady decline in the number of new cases has continued.——On October 17 it was announced that the Emergency Hospital at New Orleans would receive no more cases.——On the same date eleven acting assistant surgeons who had received local appointments were released.——On October 22 there were only two new cases reported in New Orleans and no deaths.——All Mississippi quarantines were raised on October 23.——Texas has raised

its quarantine except as against infected points.——At Pensacola the epidemic is yet active, due wholly to the fact that a large element in the population will not co-operate in fumigation and other sanitary measures, especially the reporting of cases.——Castleberry, Ala., has had two cases of yellow fever, the infection coming from Pensacola.——Georgia has extended its quarantine to include several Alabama counties.——Knoxville, Tenn., has discontinued train inspection.——Arkansas has modified its quarantine only slightly.——Cincinnati has discontinued its recently established train inspection system which employed thirty physicians.

Cholera in Manila.—During the week ending September 2 there were 70 cases of cholera in Manila, with 56 deaths. During the following week, according to *Public Health Reports*, there were 78 cases, with 69 deaths. The first cases of cholera were of the most virulent form. Those who were attacked succumbed in a few hours, and all had the type ordinarily described as cholera sicca. The disease has not shown a tendency to localize itself in any one portion of the city, and, so far, there has been no second case to appear in any house in which the disease has been discovered. This would indicate that the disinfecting measures which are being practiced have been effective. Those portions of the city which are the most crowded, and in which the so-called "slum" population resides, so far have been but slightly invaded. In fact, the disease has appeared sporadically in every portion of the city, and the persons who have been attacked up to the present time have been generally of the better classes. So far, there have been 7 Americans (?) attacked, with 3 deaths; also 6 Europeans, and, in proportion to the population, there have been more cases among the Americans and Europeans than among natives. There is as yet no exact evidence as to where the disease started. It is known, however, that cases occurred in Taguig and Pateros, which are small villages near Lake Laguna in the interior of Luzon, at least one week before the disease was found in Manila. Numerous theories have been advanced as to its origin in these places, but no satisfactory conclusions have been reached. Among others is the fact that the body of a person who died of cholera was exhumed at Pateros shortly before the outbreak. Another is that possibly the conditions of some of the wells near Pateros are such that cholera germs may live in them indefinitely, and, at times, for some unknown reason, assume a virulent form. Many medical men of the islands are now inclined to believe that the disease is indigenous to the Philippines. One point has been observed which should receive consideration by laboratory workers, and that is that for some time before the outbreak persons died with all the clinical symptoms of cholera, and on postmortem examination the bodies presented the gross pathologic lesions of the disease, but no organisms were found at the bacteriologic examinations which were made. The quarantine of interisland vessels has been continued, and it is hoped that it will be effective at least in preventing the spread of the disease to other islands. Army medical officers outside of Manila are co-operating with the Public Health and Marine-Hospital Service in maintaining a quarantine inspection of vessels. Major-General Corbin has tendered the services of such army medical officers for this purpose as may be spared. In view of the experience gained in the last cholera epidemic it was not deemed advisable to institute a land quarantine or to place a cordon around the city of Manila or other infected districts, because the lay of the land is such that to make such a quarantine effective at least 100,000 men would be required. The fact that no such rigid measures have been adopted has been of the greatest assistance to the board of health in gaining the co-operation of the natives. So far this course has been fully justified, because the disease has not spread to the provinces with anything like the rapidity with which it did in the former epidemic. The only places outside of Manila at which cases have occurred are Pasig, Taguig, Pateros, and Jala Jala in Rizal Province, Malabon in Bulacan Province, and Guagua and San Fernando in Pampanga Province. So far, the total number of cases in the provinces has not been as great as that in Manila. The policy of the insular board of health has been to combat the epidemic by a campaign of education rather than by rigid measures. Circulars are being sent out by the bureau of education with instructions that the teachers in the schools in every town and village throughout the Philippine Islands shall teach the contents to their pupils. The board of health likewise sends them to all its officials located in all parts of the islands. In addition, the various religious orders are also sending out the circular with the request that its contents be diffused among the people.

CANADA.

Health of Montreal.—In Montreal during the week ending October 14, 21 cases of diphtheria were reported, 8 of typhoid fever and 12 of tuberculosis. The total mortality during the week was 85, and there were 66 births.

Typhoid Fever in Winnipeg.—There is an alarming epidemic of typhoid fever in Winnipeg. There are said to be 334 cases in the two hospitals. The attention of the Manitoba Board of Health has been directed to the matter and Drs. Gordon Bell and R. M. Simpson are making an investigation into the causes of the epidemic.

Medical Organization in Lower Canada.—The physicians of Wolfe County, Canada, have organized and held their first meeting in September. Dr. A. Thibault of Wolton is honorary president, and P. Chicoine of Israeli, acting president. A general rate for fees was adopted, and a motion presented to the effect that the secretary correspond with the secretaries of other medical associations to agitate the following proposition, viz.: That the physicians of said association guarantee to cast their vote against every member of congress who works for the passage of a private bill licensing any irregular, unless the said bill has first been approved and recommended by the "Collège de médecins et chirurgiens de la province de Quebec." The *Bulletin Méd. de Quebec* for September contains the detailed account of the proceedings.

Personal.—Dr. Claude Freeman, formerly superintendent of the Hamilton (Ont.) City Hospital, has gone to China, where he will be assistant to Dr. McCartney, superintendent and surgeon of the General Hospital at Chung King, province of Sze-Chuan.——Dr. J. H. Bell, ex-mayor of Kingston, Ont., has been appointed health officer of that city in succession to the late Dr. Fee.——Dr. Charles Elliott of London, Ont., will go to China as a medical missionary at the end of October.——Dr. George D. Porter, Toronto, has gone abroad for a year's postgraduate work.——Dr. Halden Love, late of Carlton Place, Ont., but now of North Dakota, has lost the sight of both eyes through a gunshot injury, and as a consequence has given up the practice of medicine.——Dr. Nickle of Mather, Man., has succeeded to the practice of the late Dr. George Riddell of Crystal City, Man.——Dr. Mulvey of Minto, Man., has been taking a postgraduate course in Chicago and will locate in Crystal City, Man.

Hospital News.—The total number of patients treated in the General Hospital, Winnipeg, during the week ending October 14 was 379, of whom 262 were men, 76 women and 41 children. In the outdoor departments the number treated was 103.——At the beginning of September there were 60 patients in the Vancouver General Hospital; 60 were admitted during the month; 49 were discharged cured, 7 died, and there were left in the hospital September 30, 64 inmates.——The estate of the late Hart A. Massey, Toronto, has donated $100,000 to the Toronto General Hospital. This gift now brings the available amount for the new hospital up to $979,000. The total amount required for the project is $1,200,000 to $1,400,000.——Mr. Thomas McCormack of London, Ont., has made arrangements to erect a handsome seven-roomed cottage on the grounds of the Muskoka Cottage Sanitarium. The expenditure for this purpose will amount to $6,000.——The Victorian Order of Nurses in Canada does work in 16 districts and has 17 hospitals, where over 6,000 patients have been treated.

FOREIGN.

Yellow Fever in French Guiana.—It is reported that 2 cases of yellow fever have occurred at one of the convict stations on the Maroni River.

Plague in China.—The American consul general in Niuchwang reported October 12 that cases of plague had occurred in that city with one death. The disease is supposed to have originated in Antung. Traffic in the interior is temporarily interrupted.

Cholera in Europe.—The *St. Petersburg. Wochft.* states that it has been officially announced that 27 cases of cholera were reported in Russia between September 1 and 10, with 17 deaths. The cases were scattered through three districts, Warsaw, Lodz and Lomsha.

Monkeys for Neisser.—A hundred monkeys of all kinds and sizes have been embarked at Singapore en route for Breslau, destined for Professor Neisser's experimental work in inoculation of syphilis. They have been ordered by the German government and include some just caught and others that have already been domesticated by the Malays as shown by the earrings they are wearing. Neisser is still in Java, but he will soon follow this consignment.

Italian Prize Awarded to Vulpius.—The international "King Humbert" prize of $500 for the best work or the best discovery in the domain of orthopedic surgery during the last five years was awarded this year for the first time. The recipient was Prof. O. Vulpius of Heidelberg, Germany, for his work on the transplantation of tendons to relieve paralyses. The prize money has been presented by Vulpius to a home for cripples now being erected in Baden.

Medals Presented by Tuberculosis Congress.—The newly endowed "tuberculosis medals" were awarded at the closing session of the Tuberculosis Congress at Paris. The two gold medals were given to Robert Koch of Germany and to Paul Brouardel of Paris. Silver medals were given further to Billings of New York, Bang of Copenhagen, Broadbent of London and von Schroetter of Vienna. It was officially announced the next congress will be held in this country in 1908.

Another Russian Medical Congress in Trouble.—The Congress of Russian Psychiatrists met at Kiev in September, with Professor Ssikorski in the chair. About 130 members assembled, but at one of the meetings a large crowd of students and others gathered outside and demanded entrance. They at once proceeded to turn the meeting into a political demonstration, demanding the release of certain persons who had been recently arrested by the authorities. The president had to summon police aid and adjourn the congress.

Cholera in China.—Acting Assistant Surgeon Ransom reports from Shanghai that he has learned from a fairly reliable source that there were about 400 deaths in that city from cholera of natives in one guild (society), which has a membership of about 200,000, though at present the disease seems to be in abeyance. Dr. Ransom states that there were probably about 600 deaths from this disease during July, August and September, and that this has been an exceptionally healthy year, so far as cholera is concerned.

Plague and Cholera in India and Burmah.—In India during the week ended Aug. 26, 1905, there were 2,873 cases of plague, with 2,050 deaths, and during the week ended Sept. 2, 1905, 3,157 cases and 2,330 deaths. It is reported from Rangoon that the destruction of rats was continued with unabated vigor during August. During that month 13,128 rats were destroyed. Total number of rats killed since February, when the epidemic commenced, to the end of August, 142,985. Acting Assistant Surgeon Eakins reports that during the week ended Sept. 2, 1905, there were 28 deaths from cholera and 11 deaths from plague, and during the week ended Sept. 9, 1905, 34 deaths from cholera and 15 deaths from plague in Calcutta.

Hospital for the Blind in Porto Rico.—An asylum for the blind was opened at Ponce, P. R., the beginning of October. It was dedicated by Governor Winthrop and the Stars and Stripes were raised over the building by Mrs. Winthrop while a native band played "The Star Spangled Banner." The building, with its modern furnishings, is worth $40,000, and is on an excellent site on a hill overlooking Ponce and the Caribbean Sea. The furnishings are from the United States throughout. As the work expands the capacity will be enlarged. The legislative assembly of Porto Rico has provided for maintenance of 150 inmates and 30 employes for the present fiscal year. It is a noteworthy fact that every officer and employe of the new asylum is a Porto Rican. It will be at the start both a hospital and a home. The most urgent cases from the various municipalities will first be selected and by degrees as the cures are effected, the demand for a hospital of this class will diminish and more importance will be given to its character as a home for the incurable.

Official German Report on Relations Between Human and Bovine Tuberculosis.—The Imperial Board of Health of Germany has given out for publication the report of the committee which has been studying during the last two years, under governmental auspices, the relations between human and bovine tuberculosis. The committee distinguishes two types of tuberculosis in warm-blooded animals, the tubercle bacilli of fowl tuberculosis and the tubercle bacilli of mammal tuberculosis. The tubercle bacilli of mammal tuberculosis can be further classified as the human and the bovine. From one to two years of experiments and tests failed to show any indications of transformation of any one of these types into another type. The attempts to inoculate cattle with human tuberculosis all resulted negatively. Nine cases of tuberculosis of the bovine variety were discovered among 67 persons with tuberculous lesions, and in 2 both types of bacilli were found. The bovine cases were all in children under the age of 8, and in 6 of the cases infection had evidently been by way of the intestines. In 2 cases the lesions were in the neck. The bovine tubercle bacilli were found in or near the entering point of the bacilli or in the glands near by. The bovine bacilli cultivated from the human lesions showed no differences in any respect from those cultivated directly from cattle. The report further states that tuberculosis in cattle was found to be caused by bovine tubercle bacilli from cattle or other domestic animals, man being also liable to be a source of infection in the rare instances when affected with tuberculosis of the bovine variety. Pigs are susceptible to both bovine and human tuberculosis infection, but the disease in swine is almost invariably of bovine origin. Feeding swine with swill from dairies is an important source of their infection with bovine tuberculosis. Tuberculosis in other domestic animals is generally traceable to infection from cattle. In poultry tuberculosis is due to infection with the tubercle bacillus specific for fowls, and this plays no part in the spread of tuberculosis among human beings. In man tuberculosis is generally due to infection with human tubercle bacilli. Infection occurs mainly by transmission from man to man, but there is also a possibility that it may be transmitted by pork from swine infected with human tubercle bacilli. The fact that bovine tubercle bacilli are sometimes found in human tuberculous lesions shows that the human body is capable of infection from the secretions, excreta or meat of tuberculous domestic animals. As a rule, the action of the bovine tubercle bacilli in man is limited to a pathologic process at the portal of entry and the adjacent glands, or in the latter alone, but cases are known in which the process has become general and fatal. The report concludes by pointing out the danger of infection from milk and meat from tuberculous animals unless the bacilli are killed by heating. The report is published in full in the *Deutsche med. Wochft.*, October 5. It is signed by H. Kossel and R. Weber. The former is now professor and director of the Institute of Hygiene at Giessen; both are experts in the service of the imperial Board of Health. Kossel delivered one of the main addresses in the section of surgical pathology at the recent International Tuberculosis Congress at Paris, his being the third address on the subject of "Comparative Study of Various Tuberculoses."

The Communication of von Behring to the Tuberculosis Congress.—At the closing session of the congress von Behring announced that in the course of the last two years he had established the existence of a curative principle entirely different from the antitoxic principle. It is the essential element, he stated, in the immunizing action of the vaccine with which he has been successfully combating bovine tuberculosis. Four years of experience have demonstrated the efficacy of the bovovaccine, and it is being applied now on a large scale in agricultural circles. "The curative principle," he continued, "depends on the impregnation of the living cells of the organism with a substance derived from the virus of tuberculosis, which I call TC. When the TC has become an integral part of the cells of the organism of the animals treated with it, and has become transformed by these cells, I designate it as TX. In the bacillus of tuberculosis the TX, or, rather, the TC preexist as an agent endowed with a large number of extraordinary properties. In the bacillus this agent has the function of a formative substance. It has also fermentative and catalytic properties. It can fasten itself by contact on other substances—a phenomenon called 'adsorption'—and has assimilating properties, in short, it represents the 'quasi vital principle' of the bacilli. In cattle, in the process of rendering them immune to tuberculosis, the TC is freed from accidental substances. It exerts a symbiotic action inside the cells of the organism, especially in the cellular elements which are derived from the germinal centers of the lymphatic tissue. The presence of the TC is the cause of the supersensitiveness to Koch's tuberculin, on one hand, and of the protecting reaction against tuberculosis, on the other hand. This conception of a cellular immunity is entirely different from the antitoxic humoral immunity." THE JOURNAL of Oct. 17, 1903, page 994, presented Behring's announcement in regard to vaccination of cattle against tuberculosis. (See also page 620 of volume xlii.) His experience has convinced him that the technic was inapplicable to man, it being unwise to inject live tubercle bacilli into human beings for therapeutic purposes. He continued, in his congress address: "The discovery of this curative principle is destined, I believe, to protect human beings threatened with phthisis against the injurious action of tuberculous infection. As I studied it more and more I found that the relations between vaccination and immunity became plain, and that it solved one after another of the puzzling problems in regard to the nature and mode of action of antidiphtheria serum. After the discovery of the curative principle my efforts were directed to produce it *in vitro* and thus spare the cells of the organism the arduous and sometimes dangerous task of

elaborating the TX under the influence of the TC. This I have accomplished, substituting passive immunization for the active immunization of my bovovaccine. The TC has to be freed from the substances which interfere with its therapeutic action. There are three groups of such substances in the body of the bacillus. The first is a substance which has a fermentative and catalytic action and is soluble in water. The toxic elements in Koch's tuberculin are derived from this substance. It possesses all the physical, chemical and tinctorial properties of volutin, and I call it TV. A single gram of this substance in the dry form is more powerful than a liter of Koch's tuberculin. The second substance is soluble only in a neutral salt, such as a 10 per cent. saline solution. I call this substance TGL, as it is like globulin. The third group includes various non-toxic substances, soluble only in ether, alcohol, chloroform, etc. After the bacillus has been freed from these three groups of substances it still retains its shape and staining properties, but it can be modified into an amorphous substance which is absorbed by the lymphatic cells. The amorphous substance is elaborated and metamorphosed by these cells and they become oxyphile and eosinophile. Parallel with this transformation of the cells under the influence of the amorphous substance, the TC, the organism acquires the condition of immunity. One of the fundamental facts is that while the TC is not capable of reproduction, it yet has the power of inducing the formation of the tubercle. The tubercle thus created never undergoes caseation and never softens. It corresponds exactly to 'Laennec's tuberculous granulation.' In certain conditions the TC may also induce gray or gelatiniform infiltration." In conclusion, Behring recalled that four years elapsed after his communication in regard to antidiphtheria serum before the profession at large accepted it. Its acceptance was hastened by Roux's cordial backing, and he hopes that he may be fortunate enough to obtain such a friend for this new remedy, with as much conquering force and the same disinterestedness above all suspicion. He intends to publish a book next year with the title "Modern Phthisiogenetic and Phthisiotherapeutic Problems Illuminated by History." He remarked in regard to it: "The part of the work devoted to the therapeutic aspect of the question will not appear until the therapeutic efficacy and harmlessness of my new remedy shall have been demonstrated by clinicians better versed than I am in the knowledge of the individual varieties of pulmonary phthisis and its prognosis." . . . "I hope that all the scientists to whom I shall entrust my remedy, after my return to Marburg, for them to try it on animals, will obtain in their laboratories as good and even better results than my own."

LONDON LETTER.

How to Combat Consumption.

In a letter to the *Standard* Dr. Tolniewski advocates a modification of the method of combating consumption which is in vogue on the continent. The discussion on the subject, he thinks, should not be confined to the medical press. There are at present in Great Britain 200,000 poor consumptives and about 1,000 beds for them, which means that only 1 in every 70 can be treated per annum. The annual cost to the nation from tuberculosis amounts to $150,000,000, and the cost of relieving the pauperism resulting therefrom amounts to another about $5,000,000. Would it not be wiser, he asks, to spend this sum in curing the patient than in relieving the pauper? The most simple and effective way to do this would be to organize in all the urban centers special dispensaries for the prophylaxis of tuberculosis. The principal mission of these dispensaries would consist not only in giving free consultations and medicine, but in attracting and detaining poor consumptives or those suspected of consumption, giving them food, clothes, etc., when they are obliged to interrupt their work, disinfecting their homes, washing their linen, and sending to sanatoriums those requiring special treatment. The mistake has been made of erecting palatial sanatoriums at great expense while the much less expensive special dispensaries have been neglected. Often it will be necessary not only to treat a patient medically, but to provide him and his family with the necessaries of life, and to rectify the hygienic conditions of his home. The means of assistance might be classified as follows: First Class.—Those receiving meat, coal, milk, bread, vegetables, eggs and part of rent. Second Class.—Those receiving milk, bread, meat, eggs, vegetables and 5 shillings a month toward rent. Third Class.—Those receiving milk and eggs. Under this plan the budget of a dispensary which assisted annually 500 consumptives, cured one-fourth of them and improved the health of more than half the others, without many of them ceasing their daily work, would be considerably less than that of a sanatorium with 50 beds.

Pharmacology

Secret Proprietaries and Prescription Writing.

There is a vast and ever-increasing number of so-called "ethical preparations" with fanciful names, samples of which, with much seductive literature, are poured into every physician's office, and which he is assured by the silver-tongued detail man will be just the thing for this or that obstinate case, which the physician happens to have on hand. The sample is made use of, perhaps the patient feels better the next day, and the physician continues to use the preparation until another remedy takes the place of the first. It is so much easier to write for the proprietary by its euphonistic, and perhaps easily remembered name, than to write a prescription, that many physicians use nothing else in their practice; and then, too, there are many physicians, particularly among the recent graduates of some of our best medical schools, and this is the point we would particularly emphasize, who can not write prescriptions at all. The Minnesota State Board of Medical Examiners, doubtless other state boards have had the same experience, have observed during the last few years many candidates who passed excellent examinations in the other branches displayed hopeless ignorance in their answers to questions concerning materia medica, and particularly concerning prescription writing. There is evidently something radically wrong in the teaching of materia medica in our medical schools, and it is quite time for a radical change in these methods. There should be regular, syatematic drilling in prescription writing, even if the time for this work must be found at the expense of some of the more spectacular instruction, in, for instance, major surgery, which the students now receive. The subject of prescription incompatibilities, which now receives but little attention, should be made much more prominent, and we would also suggest that a few practical lectures and demonstrations on the subject of proprietary remedies would be of great value. Let the students, for instance, be taught that "antikamnia" consists of acetanilid, 68 parts; caffein, 5 parts; citric acid, 5 parts, and bicarbonate of soda, 20 parts, and that it costs but a few cents an ounce. They will not then be so likely to make their patients pay a dollar for what the druggist can dispense for 25 cents. Let the other fashionable proprietaries be discussed in the same manner—the Council on Pharmacy and Chemistry of the American Medical Association is rapidly accumulating the material for such teaching—and we feel sure that those who graduate in medicine, having had these facts impressed on them, will not prescribe proprietary remedies, except in those cases where they have good reason to believe that the proprietary is the best thing to prescribe.—*St. Paul Medical Journal.*

The Propaganda Against "Patent" "Proprietary" Medicines.

Of course, our readers realize the fact that a propaganda is being conducted against the "patent-medicine" evil of this country, and that those who are making fortunes out of this traffic in human health and life are thereby greatly agitated. The leaders in the protest against "patent medicines" are the *Ladies' Home Journal*, and *Collier's Weekly*. There are influential laymen quietly but effectively aiding the cause, but, we are sorry to say, physicians are not assisting as they should. This, however, is another story.

The "patent-medicine" men and the makers of proprietary remedies are united in an organization known as the Proprietary Association of America, and the fact that the majority of the manufacturers of these remedies are among its members is sufficient to know that it is a power as far as dollars and cents are concerned. This association is using every effort to stem the tide, and one way of doing it is to influence public opinion.

Recently Mr. J. A. Patten of the Chattanooga Medicine Company—manufacturers of Wine of Cardui, etc., and who was announced as representing the Proprietary Association, delivered an address before the Tennessee State Pharmaceutical Association, which was a defense of "patent medicines." This address has appeared, either in full or in abstract, in

newspapers all over the country, but especially in the South.

On reading this address one will be impressed with the fact that the "arguments" sound familiar; that they have been heard before. And sure enough they have been, for are they not the same that the secret "proprietary" manufacturers use and that appear so often in medical journals which defend the prescribing of proprietary medicines? Of course, they—the manufacturers and so-called medical journals—do not defend "nostrums," but secret proprietaries. Incidentally, and in parentheses, we have always been at a loss to know how to distinguish between a secret "proprietary" and a "patent medicine." Reading Patten's address we are still more at sea, for he calls the class of medicines he defends "proprietary."

We quote from the Mobile (Ala.) *Register* and take the liberty of interjecting a word here and there to point a moral as well as to adorn the tale. In other words, we apply Mr. Patten's remarks to the question as it relates to so-called proprietary preparations and to physicians:

"Mr. Patten said that he felt inclined to speak a few words about the so-called 'patent medicine curse,' inasmuch as we have recently had unusually severe and persistent attacks on the manufacturers of proprietary [patent] medicines from influential publications and prominent medical organizations. He said one widely circulated paper [*Collier's Weekly*] had gone so far as to state that these manufacturers and the newspapers were in a 'criminal conspiracy' to defraud and poison the public."

"We first observe that it is not from the public [medical profession], the great mass of people [physicians] who use medicines, that these criticisms arise. Note the source from which they come, and the self-appointed guardians appear for a competent people [physicians] who have not asked for such protection."

How very, very familiar this sounds.

"It must also be admitted by fair-minded people [physicians] that every self-interest of the manufacturer prompts him to put out a remedy which is not only meritorious, but safe. However unscrupulous he may be at heart, common sense teaches him that only as he produces an article that will 'repeat'—which will meet the needs of the people who buy it [physicians who prescribe it]—can he reach success."

"Admitting that there are fakes in medicine as in every other line of trade, is it not true that the leading proprietary [he means 'patent'] medicines that have stood the test of time are of known therapeutic value? Are they not prepared in laboratories of the highest grade, under the care of skilled pharmacists, and made from approved formulas, which in many instances have been the especial pride and specific of some successful physician or chemist? [This does not sound so familiar.] Have they not been tried in the crucible of public opinion and been found satisfactory by the people [physicians]? For otherwise would not the people [physicians] discontinue using them? Are they not generally obtained at a mere fraction of the cost of the same class of medicines when obtained through a physician's advice and prescription? Are not the millions of people [thousands of physicians] who use them satisfied?"

"Then there is the formula bill. This makes it necessary for every proprietary [patent] medicine house to print the formula of the medicine on the label. With no real benefit to the public [medical profession], this would open the door to a flood of imitators and frauds, who would endeavor to profit by the advertising and reputation of the originator of the formula. It would do the public [medical profession] not one atom of good and only result in the demoralization of trade conditions, besides making it possible for thieves to steal the stock in trade of an honest manufacturer." [The same old argument.]

"In all I have said in speaking of proprietary medicines, I do not refer to the 'fake' concoctions of cocain or other admittedly harmful drugs or 'booze,' put up in the guise of *bona fide* remedies. They are no more proprietary medicines than counterfeit bills are real dollars."

This sounds natural, too. Any manufacturer of secret preparations, whether these be "patent" medicines or "proprietaries," will acknowledge that there are some of these remedies which are not good and which should not be used."

We heartily recommend this address by the manufacturer of Wine of Cardui to the secret proprietary manufacturers of the United States and to the medical journals which defend them. The foregoing quotations—we have only space for a few samples—will show how easily this address might be modified so that it could be used as "literature" to convince physicians that the use of secret proprietary medicines is all right.

In this connection, it might be interesting to know what the Chattanooga Medicine Co. manufactures and their manner of advertising. So far as we can learn, their chief product is "Wine of Cardui," and the following advertisements from daily papers which are supposed to be reputable and which are received in the homes of respectable people will indicate what it is:

But, as we have stated, it is the *weak* woman who suffers such fearful pains at childbirth. Perfectly sexed, strong, healthy women don't.

The Indian mother, on the trail, stops for an hour or so by a river or creek, and then starts on with the new papoose on her back to catch up with the rest of the tribe, which has not even delayed its march to await her.

It is possible for you to build up your female organs, functions and constitutions, to such a state of vital, hearty health, that the Crown of Womanhood will come to you, without its Cross or Thorns.

To accomplish this by natural methods treat yourself with Wine of Cardui, the scientific, specific, health tonic for women.

Cardui, a pure extract of medicinal herbs, exerts a natural, restorative action on the weak female functions, regulates all irregularities, relieves periodical pain, restores failing womb by strengthening the womb muscles, and revitalizes the entire female constitution.

In 70 years it has relieved the sufferings of over a million women.

Here is another advertisement clipped from a current daily newspaper:

The best wife is a good chum or companion, and in the right wife before age and beauty comes health, or in the power and beauty of superb womanhood man finds his best mate. A well-sexed woman wins success also in business, literary or social life—where the weak-sexed one fails. What is your chance for success or happiness in married or other spheres of life? Are you a victim to any of the many forms of disease peculiar to women, which prevents you from tasting to the full the enjoyment and happiness that is due you? If so, cure yourself. It can be done at home, by simple, safe and reliable means—by taking Wine of Cardui, the successful tonic for sick women. . . . Cardui relieves periodical pain, *pulls up falling womb* [italics ours] and builds up health tonicity. Over a thousand women a month testify to its curative powers. Are they all mistaken?

Here is an advertisement from the *Chicago Tribune*:

The knell of health is tolled for many a poor woman when she enters the married state. Thousands write: "Have not seen a well day since." The manifold duties of married life are too hard for most weak women, but relief is easily obtained by just taking Wine of Cardui. Has cured a million women. No other medicine in the world has done so much good to sick women as Cardui. It relieves pain. Remember, this is the medicine you have heard so much about. It will restore your health as it has restored health to a million others. Ask for it. Get it. Take it.

Every druggist sells Cardui in $1.00 bottles.

Pharmacology and Therapeutics of To-day.

The lay public has, for a long time, regarded the dictum of the medical man as authoritative, and even if an occasional cavil arises, it is individual and not general. Indirectly, the profession itself is responsible for the abuse of the general public by proprietary and patent medicine concerns. Any druggist will corroborate the statement that the bulk of his stock of proprietary medicines is kept for the physician's prescriptions, rather than for dispensing to the demands of ordinary counter trade. The neglected shelves of most doctors' offices are full of an assortment of these things, and if the public were not first reached through the medical profession, a regular staff of detail men would not be employed and salaried. When even the highest medical office in the gift of the profession is employed to exploit a proprietary medicine, even if a mild apology did follow, it argues the value the manufacturer places on such indorsement. And the evil grows. Every one of these compound proprietary preparations carries reports in abstract or out-and-out indorsements, signed by the physicians themselves, often men of recognized authority in their own communities. Of course, the encouragement to further traffic in the medical man's gullibility follows.

These are the conditions as they exist. It requires only a short step for the remedy, accepted by the physician, to be popularized.

The essential factor in all this is much more radical. The fault lies in the training of the medical man himself. It is not far from the mark to say that nine-tenths of the graduates in medicine know little or nothing of pharmacology. Prescription writing is acquired slowly after practice is begun, and the vast majority of young doctors copy prescriptions of older men, or follow those printed in the texts.

The struggle of the medical student, after his degree, discounts all interest he may have in acquiring any of the elements of a medical education not required in the curriculum. Most medical schools either openly omit all teaching of pharmacy and pharmacology, or else devote a casual lecture or two to expounding the elements. The United States Pharmacopeia is practically unknown to the average medical student and physician, and original prescription writing is as lost an art as Damascene blades.—Editorial in *New Orleans Medical Surgical Journal*, September, 1905.

Work of the Council Indorsed.

At the recent meeting of the Michigan State Medical Society the following resolutions, presented by Dr. H. O. Walker, Detroit, were adopted:

Whereas, Last year the Michigan State Medical Society urged the American Medical Association to provide means for determining the exact composition of medicinal supplies of proprietary substances, in general use, and for publishing the same;

Whereas, Said American Medical Association has established a "Council of Chemistry and Pharmacy" for this purpose, composed of persons both competent and trustworthy;

Whereas, The results already published, foreshadow the great importance of the work, as indicated by the approval of friends, and howls of those fattening on the ways "that are dark" in pharmacy;

Resolved, That the thanks of the Michigan State Medical Society be extended to the American Medical Association for putting into practical operation its request, at so early a date, and in so admirable a manner.

Resolved, That we urge the Council to push its studies of medicines of unknown composition, as rapidly as possible, and to publish the same, that the individual doctor may better know his tools, that medical journals may have a correct standard in regulating their advertising pages, that honest, open pharmacy may be encouraged, and that outsiders may be attracted to organizations which thus are trying to help them in their work.

At its recent meeting in Atlantic City the American Pharmaceutical Association adopted the following resolutions:

Resolved, That the American Pharmaceutical Association, in general session assembled, commends all proper efforts on the part of the American Medical Association to differentiate between the various so-called proprietary remedies with a view of correcting the abuses at present existing in connection with the advertising pages of medical journals.

Resolved, That a copy of these resolutions be forwarded to the secretary of the American Medical Association.

Marriages

DE MOTT RYAN, M.D., to Miss Iva Ballou, both of Virgil, N. Y., October 4.

DANIEL E. CULLERS, M.D., to Mrs. Ida Long, both of Stella, Mo., October 4.

E. VAN HOOD, M.D., to Mrs. Louisa B. Porter, both of Ocala, Fla., September 30.

R. B. STAFFORD, M.D., to Miss Angie Ewing, both of Walnut, Kan., September 27.

HARRY A. JACOBS, M.D., to Miss Naomi Marer, both of Indianapolis, October 11.

OTIS T. WINGATE, M.D., to Miss Mayione E. Astley, both of Philadelphia, October 18.

HENRY H. KAPP, M.D., to Miss Rosa Hege, both of Winston-Salem, N. C., October 11.

FRANK L. GILBERT, M.D., Grafton, Vt., to Miss Elva Mack of Windham, Vt., October 4.

IRVING J. FISHER, M.D., to Miss Gertrude Hall, both of Somerville, Mass., October 6.

WILLIAM H. SLATTERY, M.D., to Miss Florence Marr, both of Lincoln, Neb., October 10.

PERLE CLIFTON IRWIN, M.D., Gibson, Iowa, to Miss Mabel Almira Blake, October 18.

GRANVILLE L. FOX, M.D., to Miss Mamie McDade, both of Gallman, Miss., October 1.

FRANCIS P. PATTERSON, M.D., to Miss Edith Adamson, both of Philadelphia, October 21.

WILLIAM COGSWELL, M.D., Boston, to Miss Miriam G. Clay of Lexington, Ky., October 10.

OLIVER FISHER, M.D., Sloan, Iowa, to Miss Nina Norwood of Denver, Colo., September 9.

EARNEST R. LUCKETT, M.D., to Miss Nellie E. McDonald, both of Marengo, Ind., October 15.

ROSE FAIRBANK, M.D., to LESTER H. BEALS, M.D., both of Ahmednagar, India, September.

JOSEPH K. SWINDT, M.D., Pomona, Cal., to Miss Estelle Martin, at Denver, Colo., October 7.

THOMAS FORD HUEY, M.D., to Miss Mattie Marion Greene, both of Blocton, Ala., October 4.

FRANK WILBUR FOXWORTHY, M.D., to Miss Leila Thomas, both of Indianapolis, October 11.

EARL SURREY PACKWOOD, M.D., to Miss Ethel Lanore Jones, both of Buffalo, N. Y., October 4.

THOMAS P. BODKIN, M.D., to Mrs. Julia Tanforan Pacheco, both of San Francisco, October 8.

WALTER R. EVANS, M.D., Jackson, Ohio, to Miss Anna Lewis of Columbus, Ohio, September 27.

OLEN ROY COOPER, M.D., Banfield, Mich., to Miss Verna Davis of Battle Creek, Mich., October 3.

HAROLD HARGREAVE ROBERTS, M.D., Maywood, Ill., to Miss Leila Lines of Chicago, October 14.

EDWARD P. CROSBY, M.D., Lomira, Wis., to Miss Edwina Burg of St. Anna, Wis., October 24.

JOHN J. CATLIN, M.D., Buffalo, Minn., to Miss Edith Anna Larkin of Alden, Minn., October 17.

M. JEAN WILSON, M.D., Warsaw, N. Y., to Miss Charlotte Capwell of Dale, N. Y., October 12.

HERBERT B. WILLIAMS, M.D., Gladys, Va., to Miss Sue Kabler of Campbell County, Va., October 3.

WILLIAM D. TUCKER, M.D., to Mrs, Isadore Ballou Flanders, both of Newburyport, Mass., June 14.

IRVINE F. P. TURNER, M.D., to Miss Olive Josephine Agnew, both of Titusville, N. J., October 25.

JAMES R. PHARR, M.D., Dunloop, W. Va., to Miss M. Mattee Mulford of Richmond, Va., October 16.

WILFORD W. HAWKE, M.D., to Miss Aimee Josephine Pennypacker, both of Philadelphia, October 7.

ISAAC MOORE, M.D., Alton, Ill., to Miss Elizabeth Foree of Melville, Ill., at Quincy, Ill., October 5.

J. WILLIAM SCHULTZ, M.D., Tremont, Pa., to Miss Eva Viola Zimmerman of Sunbury, Pa., October 4.

JAMES M. FETTERMAN, M.D., Hawthorn, Pa., to Miss Laura B. Ablett of Allegheny, Pa., October 4.

BEECHER FRANKLIN STOUT, M.D., Kansas City, Mo., to Miss Liora Beach of Olathe, Kan., October 18.

HENRY ROSE CARTER, M.D., to Miss Mary Washington Pendleton, both of Ashland, Va., October 18.

EARL ALBERT MOWRY, M.D., Mexico, N. Y., to Margaret S. Brennan of Pompey, N. Y., September 27.

WILLIAM ORLIN COLBURN, M.D., Stuart, Neb., to Miss Ethel Reighter of Kansas City, Mo., October 18.

HORACE RAINSFORD DREW, M.D., to Miss Ethel Bluebell Conover, both of Jacksonville, Fla., October 4.

HARLEY STROHL, M.D., Waggoner, Ill., to Miss Grace Gill of Girard, at Springfield, Ill., September 28.

FRED MINTY, M.D., Woonsocket, S. D., to Miss Mary Caroline Crawford of Sioux City, Iowa, October 10.

HENRIK TILLISCH, M.D., Canby, Minn., to Miss Maud Leanore Stokes of Watertown, S. D., October 4.

GEORGE HUGHES, M.D., Mexico, to Miss Mary Caroline Babb of Philadelphia, at Chester, Pa., October 11.

CORTEZ FERDINAND ENLOE, M.D., Jefferson City, Mo., to Miss Margaret Hammett of St. Louis, October 12.

HARRY GILMER WALCOTT, M.D., Dallas, Texas, to Miss Wayne Howeth of Gainesville, Texas, October 18.

JAMES WILLIAM BEASLEY, M.D., Daleville, Ala., to Miss Lula Virginia Dismukes of Union Springs, Ala., October 18.

PAUL KERNAN, M.D., Big Stone Gap, Va., to Miss Julia Graham Robinson of Graham's Forge, Va., October 12.

HARRY BURTON ROBERTS, M.D., Highland Park, Ill., to Miss Caroline Gertrude Brown of La Grange, Ind., October 17.

FREDERICK S. BURNS, M.D., Boston, to Miss Josephine Lyman Boynton of Newport, R. I., at Middletown, R. I., October 3.

GEORGE KITTREDGE BUTTERFIELD, M.D., Taunton, Mass., to Miss Margaret Florence Fulton of Everett, Mass., October 3.

Deaths

Robert Henry Harrison, M.D. Cincinnati Medical College, 1846, a member of the American Medical Association, member and vice-president in 1875 and president in 1876 of the Texas State Medical Association; member of the American Association for the Advancement of Science, the South Texas Medical Association and the Colorado County Medical Association; consulting surgeon to, and late medical director of the Atlantic division of the Southern Pacific system; consulting surgeon to the G. H. & S. Ry., a distinguished line officer, inspector general and brigadier general in the Confederate service during the Civil War; an expert of national renown on yellow fever, and one of the best known and most beloved

physicians of Texas, died at his home in Columbus, Texas, October 17, from paralysis, after a short illness, aged 78. Drs. William W. Cunningham, Beaumont; Robert W. Knox, Houston; Frank O. Norris, Eagle Lake; Matthew M. Smith, Austin; Walter Shropshire, Yoakum, and Samuel B. Mac Leary, Weimar, served as active pallbearers, and Drs. David F. Stuart, Houston; John N. Bowers, Columbus; Jaqulin S. Bruce, Eagle Lake; J. Hall Bell, San Antonio, as honorary pallbears at his funeral.

Louis A. Malone, M.D. Northwestern University Medical School, Chicago, 1885, of Indianapolis, a member of the American Medical Association and the Marion County Medical Society; who conducted a sanatorium for several years at Jacksonville, Ill., died at the Indianapolis City Hospital October 14 from cerebral hemorrhage, after an illness of two weeks, aged 47.

Asa Coleman, M.D. Jefferson Medical College, Philadelphia, 1854; for four years physician to the Indian Department in the territory of Minnesota, surgeon of the Forty-sixth Indiana Volunteer Infantry in the Civil War, a member of the Loyal Legion, was found dead in his office in Logansport, Ind., October 11, probably from heart disease, aged 72.

Joseph Huyett, M.D. Jefferson Medical College, Philadelphia, Pa., 1843, Illinois Army Board, 1862, one of the oldest practitioners in Illinois; surgeon of the Ninety-third Volunteer Infantry during the Civil War; councilman, assessor, collector and supervisor of Milan, Ill., died at his home in that city from senile debility, October 6, aged 85.

Wellington George Beyerle, M.D. Jefferson Medical College, Philadelphia, 1853, surgeon of the One Hundred and Forty-first Pennsylvania Volunteer Infantry in the Civil War, for many years treasurer of the Bernville (Pa.) school board, died suddenly at his home in that place, from cerebral hemorrhage, October 15, aged 74.

Abisha Shumway, M.D. Albany (N. Y.) Medical College, 1846, one of the organizers of the Keokuk (Iowa) Medical College, and a member of its faculty; surgeon of the Thirty-fourth Illinois Volunteer Infantry in the Civil War, died at his home in Mount Vernon, Ohio, from edema of the glottis, October 9, aged 86.

John O. McReynolds, M.D. Jefferson Medical College, Philadelphia, 1849, for many years a member of the Kentucky State Board of Health and health officer of Todd County; one of the oldest practitioners of western Kentucky, died at his home in Elkton October 6, after an illness of three weeks, from senile debility, aged 78.

George Walter McCallion, M.D. College of Physicians and Surgeons, Baltimore, 1896, city physician of Elizabeth, N. J., and a member of the Union County Medical Society, died in Alexian Brothers' Hospital in that city from acute uremia, September 29, after an illness of only a few hours, aged 33.

Charles L. Hart, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1865, hospital steward of the Sixteenth Connecticut Volunteer Infantry and afterward assistant surgeon, U. S. V., in the Civil War, died at his home in Longton, Kan., October 13, aged 62.

Albert M. Knapp, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1865, of Arlington, Providence, R. I., a member of the Rhode Island Medical Society, died at the Rhode Island Hospital, Providence, from uremia, after a short illness, October 10, aged 63.

John H. Dickenshied, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1847, said to have been the oldest practitioner in Lehigh County, Pa., died at his home in Plover October 17, from hemorrhage of the stomach, after a short illness, aged 80.

Alexander G. Lane, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1858, surgeon in the Confederate service and chief surgeon of Winder Hospital, Richmond, Va., during the Civil War, died at his home in Oakland, Cal., October 9, aged 70.

Norman K. MacKenzie, M.D. Medical College of Ohio, Cincinnati, 1844, a lifelong resident of Wellsville, Ohio, once postmaster of the city and at one time a member of the state legislature, died at the home of his son in Wellsville, October 13, aged 87.

Arthur Simonton Lynn, M.D. Hospital College of Medicine, Louisville, 1901, of Rock Hill, S. C., died at Rock Hill Hospital October 1 from tuberculosis of the intestines, for which he had had an operation in Baltimore, after an illness of two months, aged 29.

Lowell Holbrook, M.D. New York University, New York City, 1849, surgeon of the Eighteenth Connecticut Volunteer Infantry during the Civil War; in 1879 a member of the legislature, died at his home in Thompson, Conn., October 16, aged 87.

John B. Martin, Jr., M.D. Barnes Medical College, St. Louis, 1902, of Lohman, Mo., died at the City Hospital, St. Louis, October 8, from skull fracture from a blow received during the Veiled Prophet's parade, after an illness of five days, aged 26.

Frank M. Coates, M.D. University of Wooster Medical Department, Cleveland, 1871, professor of pharmacy in Baldwin University for two years, township health officer, died at his home in Berea, Ohio, October 7, after a long illness, aged 57.

Frederick Cole, M.D. Rush Medical College, Chicago, 1865, formerly of El Paso, Ill., surgeon of the One Hundred and Fifty-first Illinois Volunteer Infantry in the Civil War, died recently at his home in Garden City, Kan., aged 76.

Ulysses G. Hipp, M.D. Chicago, 1901, died at his home in Chicago, October 24, from the effects of an overdose of chloral, taken, it is supposed, with suicidal intent, aged 33. He had been despondent owing to continued ill-health.

August H. Holmgren, M.D. Royal University of Sweden, 1888, a member of the Mississippi Valley Medical Association, died at his apartments in Canton, S. D., October 17, from diabetes after an illness of more than a year.

William L. Godbold, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1867, surgeon in the Confederate service throughout the Civil War, died at his home in Knoxville, Miss., October 11, aged 73.

Vernon G. Culpepper, M.D. University of Virginia Medical Department, Charlotteville, 1876, died at his home in Portsmouth, Va., October 15, from cerebral hemorrhage, after an illness of a few hours, aged 52.

Asa Spalding Allen, M.D. Harvard University Medical School, Boston, 1830, of Cleveland, died at the home of his son in that city September 6, from senile debility, after an illness of one week, aged 94.

William Jay Gilbert, M.D. New York University, New York City, 1861, a practitioner of Wayne and Robeson counties, N. C., died at his home in Raeford September 9, from heart disease, aged 62.

Richard M. Kerley, M.D. Jefferson Medical College, Philadelphia, 1869, superintendent of the Female Hospital, St. Louis, from 1891 to 1895, died suddenly in his office in St. Louis October 19.

Franklin B. Kling, M.D. Baltimore Medical College, 1876, county physician of Dauphin County, Pa., a resident of Steelton, died suddenly at Williamstown, Pa., October 4 from heart disease.

James Earl Cox, M.D. Rush Medical College, Chicago, 1896, of Belleplaine, Iowa, died at Canon City, Colo., September 30, from tuberculosis, after an illness of nearly two years, aged 30.

Robert L. Harris, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1891, of Fulshear, Texas, died in New York City, October 11, after a long illness, aged 66.

Robert Winning Glassford, M.D. College of Physicians and Surgeons in the City of New York, 1878, of New York City, died in Roosevelt Hospital, New York City, October 18, aged 52.

James Glasgow Haywood, M.D. Memphis (Tenn.) Hospital Medical College, 1883, died at his home in Memphis, Tenn., October 4, from malarial fever, after a long illness, aged 43.

Giles Mebane McAden, M.D. Baltimore Medical College, of Charlotte, N. C., died in a hospital in New York City October 15 from pneumonia, after an illness of four days, aged 38.

Thomas M. Hinshaw, M.D. The Medical College of Indiana, Indianapolis, 1876, died at his home in Indianapolis, October 8, from cancer, after an illness of several months, aged 55.

Anna Cole Howland, M.D. New York, 1868, of Poughkeepsie, N. Y., died at Vassar Hospital in that city September 29, a few days after an operation for mastoiditis, aged 73.

Walter R. Benjamin, M.D. Bellevue Hospital Medical College, New York City, 1887, died at his home in Great Berrington, Mass., October 16, after a lingering illness, aged 42.

Henry William Koehler, M.D. University of Marburg, Germany, died at his home in Louisville, Ky., October 3, from pneumonia, after an illness of five days, aged 80.

Nelson H. Cornwell, M.D. Cincinnati, 1880, of North Amherst, Ohio, died in St. Alexis Hospital, Cleveland, September 21, after an operation for cholelithiasis, aged 58.

Jesse W. Connell, M.D. Bellevue Hospital Medical College, New York City, 1872, died at his home in New Liberty, Ky., October 14, from heart disease, aged 52.

Orletus Palmer Eaton, M.D. Detroit Medical College, 1872, of Detroit, died suddenly from heart disease at his farm at Bloomingdale, Mich., October 4, aged 60.

Lewis O. Ludlum, M.D. Geneva (N. Y.) Medical College, 1867, of West Branch, Mich., died at the home of his son in Ann Arbor, Mich., October 9, aged 70.

Edgar E. Martin, M.D. Memphis (Tenn.) Hospital Medical College, 1902, of Belcher, La., died at Roane, Texas, after a prolonged illness, October 6.

S. T. James, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1898, died at his home in Park Springs, Texas, from typhoid fever, October 14.

Matthew G. W. Jordan, M.D. Medical College of the State of South Carolina, Charleston, 1854, died recently at his home in Ruston, La., aged 80.

George H. Alexander, M.D. Detroit College of Medicine, 1894, was shot and killed by his son near his home in Hot Springs, Ark., October 9, aged 60.

Isaac H. Fry, M.D. Chicago Medical College, 1876, of Chicago, died suddenly in Arcata, Cal., from intestinal paralysis, October 4, aged 57.

Henry H. Boulter, M.D. Illinois, 1884, died at his home in Pensacola from yellow fever, October 3, after an illness of two days, aged 52.

Charles A. Gwynn, M.D. New York, 1888, committed suicide by stabbing himself in the heart, at his home in Auburn, N. Y., October 19.

Benjamin F. Greene, M.D. Cleveland, 1862, of Lynn, Mass., died at the home of his daughter in Peabody, Mass., September 18, aged 83.

J. William Clark, M.D. Medical College of Ohio, Cincinnati, 1870, died at his home in Gertrude, near Augusta, Ky., recently, aged 65.

E. Wendell Foster, M.D. The John A. Creighton Medical College, Omaha, Neb., 1902, died recently at his home in Cedar Creek, Neb.

Joseph W. Karten, M.D. Illinois, 1883, of Gervais, Ore., died at the Salem Hospital September 27, from septicemia due to a carbuncle.

Homer Bryan, M.D. Ohio, 1892, died from tuberculosis at his home in Beaver Falls, Pa., October 15, after a long illness, aged 48.

Ben H. Brodnax, M.D., died at his home in Brodnax, La., October 17, from typhoid fever, after an illness of six weeks, aged 73.

Franz Bacher, M.D. Heidelberg, Germany, 1848, died at his home in Quincy, Ill., October 15, from senile debility, aged 77.

Oscar E. B. Ewell, M.D. College of Physicians and Surgeons, Baltimore, died at his home in Marion, Md., October 6, aged 49.

Preston Bishop, M.D. Medical Department, University of Cincinnati, 1863, died at his home in Sligo, Ohio, October 15.

Edmund J. Howard, M.D. Rush Medical College, Chicago, 1888, of Corydon, Iowa, died at Saline, Ore., September 22.

Joseph W. Anderson, M.D. Jefferson Medical College, Philadelphia, 1862, died recently at his home in Ardmore, Pa.

Elizabeth Irwin, M.D. New York City, 1894, of New York City, died October 13, three weeks after an operation.

William H. Mansell, M.D. Atlanta (Ga.) Medical College, 1875, died at his home in Walthrall, Ga., October 1.

Bazil George, M.D. Medical College of Alabama, Mobile, 1872, died at his home in Enterprise, Miss., October 3.

Joseph W. Dostal, M.D. Rush Medical College, Chicago, 1892, died at his home in Chicago, October 4, aged 36.

Albert Arendt, M.D. Illinois, 1896, died at his home in Bloomington, Ill., October 22.

J. M. Gealy, M.D. Cincinnati, 1860, died recently at his home in Joseph, Ore., aged 72.

State Boards of Registration

COMING EXAMINATIONS.

Nebraska State Board of Health, State House, Lincoln, November 8-9. Secretary, George H. Brash, Beatrice.

Board of Registration in Medicine of Massachusetts, State House, Boston, November 14-15. Secretary, E. B. Harvey, Boston.

Connecticut Medical Examining Board, City Hall, New Haven, November 14-15. Secretary, Charles A. Tuttle, New Haven.

State Board of Health of Louisiana, New Orleans, November 14-15. Secretary, F. A. Larue, New Orleans.

State Board of Health of West Virginia, Clarksburg, November 14-16. Secretary, H. A. Barbee, Pt. Pleasant.

Illinois May Report.—In the report of the examination held at Chicago, May 3-5, 1905, published in THE JOURNAL, August 19, the general average attained by representatives of Rush Medical College was given as 88.3; this was an error, it should have been 87.4. The averages given for the other schools were as follows: Northwestern University, 87.6; American College of Medicine and Surgery, 81.4; Bennett Medical College, 82.2; College of Medicine and Surgery, 81.8; College of Physicians and Surgeons, Chicago, 84.2; Hahnemann Medical College, Chicago, 82.3; Illinois Medical College, 82.1; Jenner Medical College, 81.2; National Medical University, 79.

Oklahoma September Report.—Dr. J. W. Baker, secretary of the Territorial Board of Medical Examiners, reports the written examination held at Guthrie, Sept. 27, 1905. The number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 66.6 in each branch. The total number of candidates examined was 22, of whom 17 passed and 5 failed. Representatives of the following colleges passed:

PASSED. College.	Year Grad.	Per Cent.
American College of Med. and Surg.	(1905)	88.4
University of Buffalo	(1902)	78.1
Med. Col. of Alabama	(1883)	74.1
University of Michigan, Homeo. Med. Coll.	(1905)	77.8
Kansas City Med. Coll.	(1905)	74.1
Northwestern University Med. Coll.	(1905)	77.1
College of P. and S., Dallas, Texas	(1905)	69.4
Eclectic Med. Inst., Cincinnati	(1890)	72.6
University of Vermont	(1899)	84.5
College of P. and S., Chicago	(1886) 67; (1905)	72.1
University Med. Coll., Kansas City, Mo.	(1905) 74.4,	78.2
University of Tennessee	(1903)	69.1
College of P. and S., Des Moines	(1896)	78.4
Hahnemann Med. Coll., Chicago	(1905)	76.1
Memphis Hospital Med. Coll.	(1904)	68.4

The following questions were asked:

OBSTETRICS AND GYNECOLOGY.

1. Define menstruation, vicarious menstruation, vitellus, allantois, amnion.
2. Give principal differences between the male and female pelvis.
3. Name the bones of the pelvis and define false and true pelvis.
4. Give the physical changes that occur during pregnancy.
5. Describe the human embryo at the second, fifth, seventh and ninth months, giving size and weight.
6. Define morning sickness, cause, appearance, duration and treatment.
7. Name the presentations liable to be met in labor; dispose of one abnormal one.
8. Define abortion, miscarriage, premature delivery, ectopic gestation, *caput succedaneum*.
9. Give your management of a case of confinement from the time your services are engaged until the case is discharged.

CHEMISTRY AND URINALYSIS.

1. Define element, atom, molecule, a salt.
2. In how many forms do we find matter in nature?
3. Define organic chemistry, inorganic chemistry.
4. What is the essential element of all acids?
5. Classify acids and name three of each class.
6. Explain the process of combustion.
7. Name the presentations liable to be met in labor; dispose of compounds used in medicine.
8. Five chemical antidote for bichlorid of mercury, carbolic acid.
9. Give common name of the following chemicals, NaCl, HNO_3, $MgSO_4$, KI, $HgCl_2$, $AgNO_3$, H_2O, $2KClO_3CO_2$, HCl.
10. Give in detail a reliable test for albumin in urine; for sugar in urine.

MATERIA MEDICA AND THERAPEUTICS.

1. Name three drugs belonging to each of the following classes: narcotics, stimulants, emmenagogues.
2. Mention the remedies you use hypodermatically and give indications for their use.
3. Give dosage of remedies you would use in typhoid fever and pneumonia.
4. Give dosage and indications for four remedies you use in rheumatism, jaundice, malarial fever.
5. Give habitat, preparations, dosage and uses of twelve leading remedies you carry in your medicine case.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

1. What is malpractice?
2. What period of intrauterine life does the fetus become viable?

3. When is abortion legally justifiable?
4. How would you determine the presence of blood stains on clothing?
5. What mental condition renders a testator capable of making a will?
6. How would you treat a patient suffering from poisoning by coal gas?
7. What are symptoms and treatment for poisoning by the castor bean and what is considered a lethal dose?
8. What are symptoms of poisoning by wood alcohol and treatment for same?
9. What are symptoms and treatment for poisoning by muscarin or mushrooms?
10. Give symptoms and treatment for poisoning by turpentine taken internally.

PRACTICE OF MEDICINE.

1. Give treatment, medical, hygienic, and prophylactic of scarlet fever.
2. Give treatment and management of smallpox.
3. Give treatment of pertussis.
4. Give treatment, medicinal, hygienic, and prophylactic of typhoid fever, with treatment of most frequent complications that might arise.
5. Give treatment of a case of pneumonia.
6. Give treatment of a case of acute jaundice.
7. Give treatment, medical, hygienic and dietetic of acute gastritis.
8. Give treatment of a case of acute meningitis.
9. Give symptoms and treatment of case of follicular tonsillitis.
10. Give causes, symptoms and treatment of urticaria.

PHYSICAL DIAGNOSIS.

1. What is physical diagnosis and what are the methods employed?
2. Give cause, symptoms, pathology, diagnosis and prognosis of congestion of the lungs.
3. Give cause, pathology, symptoms, diagnosis and prognosis of acute pericarditis.
4. Give cause and symptoms of vertigo.
5. Give cause, symptoms, diagnosis and prognosis of renal calculi.
6. Give cause, pathology, symptoms, complications, diagnosis and prognosis of a case of acute Bright's disease.
7. Differential diagnosis between croupous and catarrhal pneumonia.
8. Differential diagnosis between erysipelas and scarlet fever in the early stages.
9. Give cause, pathology, symptoms, diagnosis and prognosis of acute dysentery.
10. Differential diagnosis between varicella and variola (a) period of incubation; (b) period of eruption; (c) character of eruption; (d) site of eruption.

PHYSIOLOGY.

1. Give the number of chemic elements in the human body.
2. Give the amount of saliva secreted in 24 hours in the adult, also give functions of saliva.
3. Give the amount of water and solids in the body of a person weighing 145 pounds.
4. Give the amount of blood (in pounds) in the body, and state the functions of the red corpuscles.
5. Give the amount of oxygen absorbed, carbonic acid exhaled and urine excreted in 24 hours.
6. Give, as far as known, the functions of the intestinal juices.
7. What are and where will you find the sebaceous and sudoriparous glands?
8. What are the functions of the iris and retina?
9. Name the organs of digestion, in the order in which they belong.
10. Give the source of muscular energy.

ANATOMY.

1. Give the number and name of the bones in the trunk and of each upper extremity.
2. Name the articulations and muscles attached to the inferior turbinated bone.
3. What kind of a joint is the sternoclavicular articulation? Give the number of synovial membranes and ligaments around this joint.
4. What are muscles, how are they formed and what are their principal uses?
5. Give origin, insertion, uses and nerve supply of the flexor longus, pollicis, and the abductor pollicis.
6. Give the longest anastomosis in the body, also give the collateral circulation after ligature of the common carotid artery.
7. Give the number and names of the fissures of the cerebrum.
8. Name the branches and organs supplied by the inferior mesenteric plexus of nerves.
9 and 10. Locate and describe the uterus, vas deferens, Eustachian and Fallopian tubes, circle of Willis, Scarpa's triangle ureters and popliteal space, inguinal hernia and the entire colon.

SURGERY.

1. Give etiology, symptoms and treatment of inflammation, septic, traumatic, and surgical fever.
2. Define suppuration, abscess, ulcers, gangrene, septicemia, pyemia and anesthesia.
3. What do you mean by asepsis and antesepsis? Give a general outline to be followed by the surgeon, his assistants and attendants in preparing the room, instruments, etc., for some major operation.
4. Give symptoms and treatment of gonorrhea, orchitis, acute prostatitis, cystitis and stricture.
5. Give differential diagnosis between strangulated inguinal hernia, hydrocele, hematocele and varicocele.
6. How would you diagnose a case of hip dislocation upward on the dorsum of the ilium from a case of hip-joint disease?
7. Give the signs of fracture and state what you would call an infallible sign, also give the process of repair in fractures.
8. When does it become necessary to tap the bladder, and if necessary, where, and how would you tap?
9 and 10. Give differential diagnosis and a cure for hemorrhoids and prolapsus ani, housemaid's knee, subcellular synovitis, carbuncle and furuncle.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending October 21.

Keefer, Frank R., surgeon, Crosby, William D., surgeon, relieved from duty in Philippines Division in time to sail from Manila, Feb. 15, 1906, for the United States.

Roberts, William, asst.-surgeon, ordered from Fort Hamilton, N. Y., to Fort Jay, N. Y., for temporary duty.

Gibson, Robert J., surgeon, relieved from duty at Fort Logan, Colo., to duty at Fort Adams, R. I.

Shaw, Henry A., surgeon, relieved from duty at Fort Adams, R. I., to duty at Fort Slocum, N. Y.

Morris, Edward R., surgeon, order for duty at Fort Slocum, N. Y., revoked, to Fort Logan, Colo., for duty.

Krebs, Lloyd Le R., asst.-surgeon, relieved from duty in the Philippines Division and at Presidio of Monterey, Cal., and ordered to duty at the Army General Hospital, Fort Bayard, N. M.

Glennan, James D., surgeon, leave of absence extended for ten days.

Rand, Irving W., asst.-surgeon, leave of absence extended one month.

Dale, Frederick A., asst.-surgeon, leaves Lemont, Pa., October 15, at expiration of leave of absence, for his station, Fort Walla Walla, Wash.

Grubbs, Robert R., asst.-surgeon, leave of absence granted for one month, fourteen days.

Schreiner, Edward R., Dutcher, Basil H., asst.-surgeons, ordered to duty in the Philippines Division, and will sail from San Francisco, Cal., December 5.

Marcw, Charles E., asst.-surgeon, left attending surgeon's office, Chicago, Ill., October 17, for his proper station, Fort Sheridan, Ill.

Kennedy, James M., asst.-surg., left Washington, D. C., October 19, for proper station, Army General Hospital, Presidio of San Francisco, relinquishing remainder of leave of absence.

Hathaway, Levy M., asst.-surgeon, arrived at station, Fort Thomas, Ky., October 17, and left same day on leave of absence for two months.

Wilson, James S., asst.-surgeon, returned to duty at Fort Oglethorpe, Ga., from leave of absence.

Blanchard, Robert M., asst.-surgeon, left Fort Thomas, Ky., October 18, on leave of absence for ten days.

Juenemann, George F., left Fort Ringgold, Texas, on leave of absence for fifteen days.

Duval, Douglas F., asst.-surgeon, granted leave of absence for twenty days about October 23.

Holmes, Thomas G., contract surgeon, relieved from duty as examiner of recruits at Detroit.

Vall, Francis M., contract surgeon, granted leave of absence for fourteen days.

Waddell, Ralph W., dental surgeon, ordered from Fort Leavenworth, Kan., to Fort Crook, Neb., for one month.

Adair, George W., contract surgeon, leave of absence granted for fifteen days.

Tenney, Elmer S., contract surgeon, left Fort Strong, Mass., on leave of absence for ten days.

Sparrenberger, Frederick H., contract surgeon, returned to Fort Mott, N. J., from leave of absence.

Carpenter, Alden, dental surgeon, left Fort Liscum, Alaska, for Vancouver Barracks, Wash.

Shellenberger, James E., contract surgeon, arrived at Fort Sam Houston, Tex., from leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending October 21.

Shaw, H., asst.-surgeon, detached from the naval recruiting rendezvous, Boston, and ordered to the Naval Hospital, Chelsea, Mass.

Dunbar, A. W., surgeon, ordered to the Naval Hospital, Mare Island, Cal.

Brister, J. M., P. A. surgeon, ordered to the Philadelphia, and to additional duty at the Navy Yard, Puget Sound, Wash.

Parker, E. G., P. A. surgeon, detached from the naval station, Tutuila, Samoa, and additional duty on the *Adams*, and ordered to the Pensacola, and to additional duty at the naval training station, San Francisco.

Fauntleroy, A. M., P. A. surgeon, detached from the *Philadelphia*, and from additional duty at the Navy Yard, Puget Sound, Wash., and ordered to the naval station, Tutuila, Samoa, and to additional duty on the *Adams*, sailing from San Francisco, November 2.

Elmore, R., asst.-surgeon, detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Washington, D. C.

Drake, N. H., medical inspector, detached from the navy yard, Norfolk, Va., and ordered home to wait orders.

Dickson, S. E. medical inspector, ordered to the navy yard, Norfolk, Va.

Bell, W. H., P. A. surgeon, detached from the *Dixie*, when placed out of commission, and ordered home to wait orders.

Porter, F. E., asst.-surgeon, detached from the *Dixie*, when placed out of commission, and ordered to the naval hospital, New York, N. Y.

Winn, C. K., acting asst.-surgeon, detached from the *Cæsar*, when placed out of commission, and ordered home to wait orders.

Guthrie, J. A., surgeon, ordered to the navy yard, League Island, Pa.

Brownell, C. DeW., surgeon, detached from the *Iowa* and ordered home to wait orders.

Morris, L., surgeon, detached from the *Florida* and ordered to the *Iowa*.

Elliott, M. S., surgeon, detached from the naval hospital, Norfolk, Va., and ordered to the Florida.

Gates, M. F., surgeon detached from the navy yard, League Island, Pa., and ordered to the *Charleston*.

Winn C. K., acting asst.-surgeon, orders of October 14, modified; ordered to the naval recruiting rendezvous, Omaha, October 23.
Oman, C. M., P. A. surgeon, commissioned P. A. surgeon, with rank of lieutenant, from Dec. 18, 1904.
Hoyt, R. E., P. A. surgeon, commissioned P. A. surgeon, with rank of lieutenant, from May 8, 1905.
Woods, E. L. asst.-surgeon, appointed asst.-surgeon, with rank of lieutenant (junior grade), from October 14, 1905.
Foster, T. G., asst.-surgeon, detached from the naval hospital, Norfolk, Va., and ordered to the Naval Medical School, Washington, D. C.
Elmore, R., asst.-surgeon, detached from the naval hospital, Washington, D. C., and ordered to the navy yard, Washington, D. C.
Hull, H. P., asst.-surgeon, detached from the Naval Academy and ordered to the naval hospital, New York, N. Y.
Baker, M. W., asst.-surgeon, ordered to the naval hospital, Washington, D. C., October 24.
Woods, E. L., asst.-surgeon, ordered to the Naval Medical School, Washington, D. C.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending October 18:

Sawtelle, H. W., surgeon, directed to proceed to Norfolk, Newport News, and Portsmouth, Va., on special epidemic duty.
Rosenau, M. J., P. A. surgeon, directed to rejoin station in Washington.
Lumsden, L. L., P. A. surgeon, granted leave of absence for ten days, from October 20.
Glover, M. W., assistant surgeon, granted leave of absence for three days from October 15.
Hunt, Reid, chief Division of Pharmacology, hygienic laboratory, leave of absence for six days from October 9, revoked.
Hallett, E. B., acting asst.-surgeon, granted leave of absence for five days, from October 11.
Follit, Edward E., acting asst.-surgeon, granted leave of absence for one day, October 14.
Sinks, E. D., acting asst.-surgeon, granted leave of absence for five days, from October 6.
Sibree, H. C., acting asst.-surgeon, granted leave of absence for five days, from October 15.
Brown, F. L., pharmacist, granted leave of absence for sixteen days, from October 14.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service during the period from October 9 to 20:

SMALLPOX—UNITED STATES.

California: San Francisco, Sept. 23-Oct. 7, 9 cases.
Florida: Jacksonville, Oct. 7-14, 1 case.
Illinois: Danville, Aug. 8-Oct. 9, 1 case; Galesburg, Oct. 7-14, 3 cases.
Louisiana: New Orleans, Sept. 30-Oct. 14, 3 cases, 1 death.
Maine: Cooper, Oct. 6, present; East Machias and vicinity, present; Jacksonville, Sept. 27-Oct. 6, 8 cases; Wesley, Oct. 6, present.
Massachusetts: New Bedford, Oct. 7-14, 1 case.
Ohio: Cincinnati, Oct. 6-13, 1 case.
Pennsylvania: Altoona, Oct. 7-14, 2 cases, imported; York, 2 cases.
Washington: Tacoma, Sept. 23-Oct. 7, 2 cases.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, Aug. 15-31, 283 cases, 283 deaths; Rio de Janeiro, Aug. 27-Sept. 30, 30 cases, 6 deaths.
Ecuador: Guayaquil, Sept. 20-27, 4 deaths.
France: Paris, Sept. 14-30, 22 cases, 4 deaths.
India: Calcutta, Sept. 2-9, 1 death; Madras, Aug. 16-Sept. 15, 1,553 deaths.
Italy: General, Sept. 14-28, 8 cases; Messina, Sept. 16-23, 1 death.
Russia: Moscow, Sept. 2-23, 13 cases, 3 deaths; Odessa, Sept. 16-23, 6 cases; St. Petersburg, Sept. 2-23, 11 cases, 2 deaths.
Turkey: Constantinople, Sept. 10-17, 1 death.

YELLOW FEVER—UNITED STATES.

Florida: Pensacola, Aug. 29-Oct. 8, 253 cases, 38 deaths.
Illinois: Chicago, Oct. 1-7, 1 death, imported.
Louisiana: Ascension Parish, to Oct. 7, 78 cases, 4 deaths; Assumption Parish, to Oct. 10, 40 cases, 1 death; Avoyelles Parish, to Oct. 7, 12 cases, 2 deaths; East Carroll Parish, to Oct. 10, 318 cases, 38 deaths; Iberville Parish, 33 cases, 8 deaths; Jefferson Parish, 4473 cases, 50 deaths; Lafourche Parish, to Oct. 6, 385 cases, 48 deaths; Madison Parish, to Oct. 9, 312 cases, 18 deaths; Natchitoches, to Oct. 9, 81 cases, 7 deaths; Orleans Parish, New Orleans, July 21-Oct. 11, 3,235 cases, 415 deaths; Rapides Parish, to Oct. 9, 24 cases, 1 death; St. Bernard Parish, 80 cases, 3 deaths; St. John the Baptist Parish, to Oct. 5, 177 cases, 18 deaths; St. Mary Parish, to Oct. 9, 801 cases, 31 deaths; St. Tammany Parish, to Oct. 10, 9 cases, 1 death; Terrebonne Parish, 311 cases, 13 deaths.
Mississippi: Gulfport, Aug. 15-Oct. 7, 107 cases, 2 deaths; Gulf Quarantine, July 22-Oct. 7, 68 cases, 1 death; Hamburg, Sept. 15-Oct. 7, 44 cases, 6 deaths; Handsboro, Sept. 17-Oct. 6, 5 cases; Mississippi City, Aug. 22-Oct. 6, 68 cases; Natchez, to Oct. 8, 93 cases, 5 deaths; Port Gibson, Sept. 27-Oct. 7, 44 cases, 1 death; Rosetta, to Oct. 8, 28 cases, 7 deaths; Soria, Sept. 14-Oct. 5, 2 cases; Vicksburg, Aug. 30-Oct. 8, 110 cases, 13 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Aug. 27-Sept. 20, 9 cases, 3 deaths.
Cuba: Sagua, Oct. 6, 1 case, on schooner.
Ecuador: Guayaquil, Sept. 20-27, 1 death.
French Guiana: Maroni River, to Sept. 15, 2 cases, reported.
Honduras: Cholera: Sept. 15-22, 1 case; Puerto Cortes, Sept. 19-26, 1 case; Rio Blanco, Sept. 15-22, 2 cases, 1 death; San Pedro, 2 cases.
Mexico: Contzacoalcos, Sept. 23-Oct. 7, 5 cases; Soconusco, Oct. 7, 2 cases; Tezonapa, Sept. 17-30, 8 cases, 5 deaths; Tierra Blanca, Sept. 17-23, 1 case, 1 death; Vera Cruz, Sept. 17-30, 4 cases, 1 death.
Panama: Bocas del Toro, Oct. 1, 1 case; Panama, Sept. 20-27, 2 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Aug. 23-Sept. 14, 172 cases, 150 deaths.

CHOLERA—FOREIGN.

China: Shanghai, to Sept. 13, 400 deaths.
India: Bombay, Sept. 12-19, 6 deaths; Calcutta, Aug. 26-Sept. 9, 62 cases; Madras, Aug. 26-Sept. 15, 969 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, Oct. 10, 1 case; Waipahu, Oct. 9, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

Australia: Queensland, Townsville, Aug. 4, 1 case, 1 death.
Brazil: Rio de Janeiro, Aug. 26-Sept. 20, 41 cases, 14 deaths.
Egypt: Alexandria, Aug. 26-Sept. 2, 9 cases, 8 deaths; Assuan, 1 case; Damietta, 1 case.
India: General, Aug. 18-Sept. 2, 6,030 cases, 4,380 deaths; Bombay, Sept. 5-19, 75 cases; Calcutta, Aug. 26-Sept. 9, 26 cases; Karachi, Sept. 3-17, 48 cases, 48 deaths.
Peru: Callao, Aug. 21-Sept. 10, 2 cases, 2 deaths; Lima, Aug. 11-Sept. 10, 13 cases, 5 deaths; Mansiche, Aug. 11-20, 2 cases, 1 death; Mollendo, Aug. 21, Sept. 10, 2 cases, 1 death; Pampa Blanca, 1 case, 1 death; Payta, Aug. 11-Sept. 10, 28 cases, 13 deaths; Trujillo, Aug. 21-Sept. 10, 1 case, 1 death.
Zanzibar: Sept. 2, 6 cases.

Medical Organization

Georgia.

HALL COUNTY MEDICAL SOCIETY.—This society was organized at Gainesville September 15 on the standard plan by Dr. W. B. Hardman, Commerce, state councilor for the ninth district, with an initial membership of sixteen. The following officers were elected: President, Dr. J. W. Bailey, Gainesville; vice-president, Dr. J. W. Oslin, Gainesville; secretary and treasurer, Dr. P. E. B. Robertson, Gainesville, and censors, Drs. James H. Downey, New Holland; John B. Rudolph, Gainesville, and William A. Palmour, Gainesville.

MUSCOGEE COUNTY MEDICAL SOCIETY.—Dr. W. L. Fitts, Carrollton, Ga., councilor for the fourth district, met the physicians of Muscogee County at Columbus August 26 and assisted in the organization of a medical society on the standard plan. Dr. Floyd W. McRae, Atlanta, and Dr. R. E. Lee Barnum, Richland, councilor for the third district, were also present. The following officers were elected: Dr. Charles L. Williams, Columbus, president; Dr. James H. McDuffie, Columbus, vice-president; Dr. Charles A. Dexter, Columbus, secretary; Dr. Thomas E. Mitchell, Columbus, treasurer; Drs. S. E. Young, Midland; John M. Crook, Columbus, and John I. Darby, Columbus, censors, and Dr. William L. Bullard, Columbus, delegate to the state association.

STEPHENS COUNTY MEDICAL SOCIETY.—This society was organized on the standard plan at Toccoa September 18 with the aid of Dr. W. B. Hardman, Commerce, councilor for the ninth district, with nine charter members. The following officers were elected: Dr. Jeff Davis, Toccoa, president; Dr. W. L. McBath, vice-president; Dr. James H. Crawford, secretary and treasurer, and Drs. J. Claude Verner, John H. Edge, Toccoa, and W. H. Parker, censors.

Florida.

LAKE COUNTY MEDICAL SOCIETY.—This society was organized September 5 and the following officers elected: President, Dr. William P. McKee, Eustis; vice-president, Dr. T. Newton Lewis, Mt. Dora; secretary, Dr. Karl Mantey, Eustis; treasurer, Dr. Guy Hutchings, Eustis.

Illinois.

CHICAGO MEDICAL SOCIETY, NORTH SHORE BRANCH.—This society has sent out an announcement of its program for the coming year. The circular is reproduced below, as a suggestion to county secretaries. This society is one of the district branches of the Chicago Medical Society.

Members of the North Shore Branch:

You are requested to assist the executive committee in preparing the program for the meetings this coming year by sending to the secretary on or before October 1, 1905, the subject of any papers you may wish to write or discuss, or have discussed. This subject to be of your own choosing or taken from some phase of the subjects as outlined below. As soon as these suggestions are received from the members the committee will arrange the program. This program does not prohibit the presentation of other papers and

discussions which members may request during the year. Kindly insert title of paper, your name and address opposite subjects indicated below, or in blank space at bottom.

R. E. GREEN, Secretary.

OUTLINE OF PROGRAM.

Oct. 3, 1905.—Informal discussion: "Business Side of Physician's Life."
Nov. 8, 1905.—"Early Diagnosis of Smallpox."
Dec. 5, 1905.—"Tuberculosis."
Jan. 2, 1906.—"The Relation of Mental Disorders to General Medicine."
Feb. 6, 1906.—"Insects as Disease Carriers."
March 6, 1906.—"Infant Feeding."
April 3, 1906.—"Annual Reception and Banquet."
May 1, 1906.—"Skin Diseases as Seen by the General Practitioner."
June 5, 1906.—"Intestinal Obstruction."
I will present a paper on the following subject at the..... meeting:.....I desire the following subject discussed:.....

Minnesota.

AITKIN COUNTY MEDICAL SOCIETY.—Physicians of Aitkin County met at the office of Dr. J. Fowler Avery, Aitkin, September 19, to attempt to revive the organization. The following temporary officers were elected to serve until October 5, when the organization is to be completed and constitution and by-laws adopted: Dr. Carlton Graves, president, and Dr. A. G. Belsheim, secretary, both of Aitkin.

FIFTH COUNCILOR DISTRICT MEDICAL SOCIETY.—A joint meeting of the societies in this district, comprising the societies of Renville, Chippewa, Lac qui Parle, Lyon-Lincoln, Yellow Medicine-Sibley and Brown-Redwood Counties, was held at Redwood Falls September 12. Dr. Henry M. Workman of Tracy, councilor for the district, presided. Dr. J. N. McCormack of Bowling Green, Ky., and Dr. Charles H. Mayo of Rochester, president of the Minnesota State Medical Association, were present and addressed the meeting.

SIXTH AND EIGHTH DISTRICT MEDICAL SOCIETY.—A meeting of the physicians of Southern Minnesota from the counties making up the sixth and eighth councilor districts, was held at Mankato September 13, when Dr. J. N. McCormack, national organizer of the American Medical Association, delivered an address on "The Advantages of Organization." The physicians of Mankato entertained those who attended the meeting at a lunch. Dr. Adolph O. Bjelland, Mankato, councilor of the eighth district, presided.

NINTH DISTRICT MEDICAL SOCIETY.—The societies making up the ninth councilor district met at Fergus Falls September 9 and perfected a district organization, Dr. Eugene A. Hensel, Alexandria, being chosen secretary. Dr. J. N. McCormack, national organizer of the American Medical Association delivered an address in which he discussed the value of organization as the means of professional advancement, holding that conventions and the discussion of scientific topics assist materially in keeping physicians informed in regard to the latest discoveries in medical and surgical science. He also urged the advantages of organization in protecting the profession from quacks and irregular practitioners.

Montana.

SILVER BOW COUNTY MEDICAL ASSOCIATION.—Dr. J. N. McCormack, national organizer of the American Medical Association, gave an address before a large gathering of physicians of Butte, under the auspices of the Silver Bow Medical Association September 24, in which he set forth the advantages of organization.

YELLOWSTONE VALLEY MEDICAL ASSOCIATION.—The physicians of Eastern Montana met in Billings September 20 and organized this society on the standard plan. Dr. Donald Campbell, Butte, president of the State Medical Association, presided. The following officers were elected: President, Dr. Henry E. Armstrong, Billings; vice-president, Dr. Joseph H. Rinehart, Billings; secretary, Dr. Charles F. Watkins, Billings; treasurer, Dr. Carl Schulin, Billings, and trustees, Dr. Henry E. Armstrong, Billings; Thomas D. Tuttle, Helena; W. L. Seamon, John L. Weitman, Great Falls, and James Chapple, Billings.

South Carolina.

ORANGEBURG COUNTY MEDICAL SOCIETY.—A meeting of the physicians of the county was held in Orangeburg September 4, at which Dr. Theodore G. Croft, Aitken, councilor for the second district, was present. The society was organized on the standard plan and a constitution and by-laws adopted. The following officers were elected: President, Dr. W. L. Pou, St. Matthews; vice-presidents, Drs. Manley, J. D. Dantzler, Elloree, and Marion S. Grissett, Branchville; secretary and treasurer, Dr. Linn C. Schut, Orangeburg, and censors, Drs. A. R. Able, St. Matthews; Arthur W. Browning, Elloree, and Michael G. Salley, Orangeburg.

Society Proceedings

COMING MEETINGS.

American Academy of Medicine, Chicago, November 9-10.
Southern Surgical and Gynecological Association, Louisville, Ky., Dec. 12-14.
American Dermatological Association, New York, Dec. 28-30.
Western Surgical and Gynecological Association, Kansas City, Mo., Dec. 27-28.

SECOND INTERNATIONAL SANITARY CONVENTION.

Held at Washington, D. C., Oct. 9-14, 1905.

The President, Dr. Walter Wyman, in the Chair.

The Second International Sanitary Convention was called to order by the president, Dr. Walter Wyman, Surgeon-General, U. S. Public Health and Marine-Hospital Service, at 10 a. m., October 9. Addresses were made by Secretary of State Root, the Assistant Secretary of the Treasury Taylor, Hon. W. C. Fox, director of the International Bureau of the American Republics, Minister Quesada of Cuba, and the president, Dr. Walter Wyman.

Delegates.

The following delegates were present:

Senor Dr. Don Eduardo Moore, of Chile.
Senor Dr. Don Juan J. Ulloa, of Costa Rica.
Senor Dr. Don Juan Guiteras, of Cuba.
Senor Dr. Don Enrique B. Barnet, of Cuba.
Senor Dr. Don Serafin S. Wither, of Ecuador.
Senor Don Miguel H. Alcivar, of Ecuador.
Senor Dr. Don Joaquin Yela, of Guatemala.
Senor Dr. Don Eduardo Licéaga, of Mexico.
Senor Dr. Don J. L. Medina, of Nicaragua.
Senor Dr. Don Daniel Eduardo Lavoreria, of Peru.
Senor Don Pedro R. Bermudez, of Uruguay.
Senor Don Emilio C. Joubert, of the Dominican Republic.
Senor Don Nicolas Velox-Golticoa, of Venezuela.
Surgeon-General Walter Wyman.
Dr. H. D. Geddings, U. S. Pub. H. and M. Hosp. Serv.
Dr. J. F. Kennedy, Iowa.
Dr. John S. Fulton, Maryland.
Dr. Walter D. McCaw, U. S. A.
Dr. J. F. Gatewood, U. S. N.
Dr. H. L. E. Johnson, Washington, D. C.

The following physicians were granted the privilege of the floor: Medical Director John C. Wise, U. S. N.; Drs. L. O. Howard, Preston H. Bailhache and Reid Hunt, of the Public Health and Marine-Hospital Service; the president of the Navy Medical School; the president of the Army Medical School; the surgeon-general of the United States Navy; the surgeon-general of the United States Army; Surgeon-General George M. Sternberg, retired; Dr. Wardell Stiles; the health officer of the District of Columbia; Dr. H. C. Wood, Philadelphia; Surgeon-General S. Suzuki, of the imperial Japanese Navy, and Dr. James Carroll, U. S. Army.

Elections and Reports.

After the appointment of an executive committee and the re-election of Surgeon-General Walter Wyman as president and the election of Dr. J. J. Ulloa as permanent secretary, the delegates to the convention were taken to the National Filtration plant, which is in the course of construction in the District of Columbia.

The following day, October 10, the delegates were taken on a government ship to Mount Vernon and Indian Head, the United States proving station. In the evening they were entertained at the Corcoran Gallery of Arts.

The executive committee presented the name of Dr. Eduardo Licéaga, who was elected president of the third convention, which is to meet in Mexico City in 1907, with Dr. Ulloa as secretary. Then followed an interesting address read by Dr. Licéaga in Spanish, accompanied by the English translation in pamphlet form which was distributed among the delegates. Addresses were made by Drs. Moore, Wither, Guiteras and Ulloa. President Wyman called for the reports of the delegates representing the several countries, which were read and referred to the executive committee for report.

Reception by President Roosevelt.

October 12, President Wyman announced that the delegates would be received by the President of the United States at the White House, saying:

"*Gentlemen:* We are about to proceed to the White House to pay our respects to President Roosevelt. Before starting I wish to assure you that you will have a cordial reception and that you will, without doubt, be greeted with words of encouragement as regards the objective aims of this convention. I wish to state that no other president of the United States has publicly expressed so often and so eloquently an appreciation of the character and labors of the physician in regard to his sacred relation to his patients, to his civic duties, and to his labors as a sanitarian.

"In his address before the Association of Military Surgeons of the United States, his address at the unveiling of the monument in Washington erected to the memory of Dr. Benjamin Rush, at the laying of the corner stone of the Naval Medical School, and very recently before the Association of Physicians of Long Island, his words were words of encouragement and of wisdom. He has declared that in military life the surgeon, besides being a surgeon, bears all the hardships of a soldier and the responsibilities of an administrator; he has declared that the physician who stands high in his profession in any city counts as one of the most valuable assets in that city's civic work, that 'no doctor can be a good doctor or a good citizen unless he does his duty by the state, and that doctors must personally pay attention to their civic duties because "everybody's business is nobody's business." It must not be left to everybody, but individually the medical man should take an interest in state matters.'

"He has thus shown his appreciation of the sentiments that are so dear to us as physicians and sanitarians, namely, that our labors are highly essential to the welfare of the state as well as to the individual. In exemplification of this he has expressed the greatest interest and confidence in the work of the sanitarians of the Isthmian Canal Zone, and has taken an initiative, the good results of which are incalculable in the sanitary work which was begun and is still being conducted in New Orleans against the yellow fever pestilence.

"In expressing this appreciation of our president I am only echoing the voluntary expressions which I have heard on many sides, and particularly at the recent session of the great American Medical Association in Portland, Oregon, where sentiments of the above nature were frequent, prompted solely by appreciation in the minds of the medical profession of the sentiments and support of our president in matters relating to individual and public health."

The President received the delegates, greeting them most cordially, and showed great interest in the purpose of the convention. He made the following address, requesting Dr. Ulloa to interpret his remarks into Spanish for him:

President Roosevelt's Address.

Dr. Wyman and Gentlemen and Ladies of the Convention: I should like to greet you and say with what peculiar pleasure I welcome you, both of the profession you represent and of the fact that you come from our sister republics of America.

I believe that we on this hemisphere are going to show to all the world—are going to teach all the world by an object lesson—that separate states, separate nations, can dwell together in absolute harmony and can unite in a common effort, as you are uniting here, for the betterment of the conditions affecting them all.

The outside world is only beginning to understand the astonishing progress made, not only socially and industrially, but in science, literature and art, by the Central and South American republics. In medical matters, in industrial, scientific, social, artistic matters, each of our countries has something to learn from the others; and I welcome you as colleagues and as teachers.

Of course, I could not overstate the all-importance of the medical profession in modern life and, as it is now becoming, in modern international life. In the old days a plague that happened in one country was regarded as only concerning that country until it spread over into some other helpless to defend itself against it. Now we recognize that the stamping out of disease, the warfare against unhygienic conditions, must be done by the organized effort of the medical profession of all the countries joined together.

Pharmacopeia in Spanish.

At the afternoon session of October 12 Dr. Guiteras presented the following resolutions concerning the U. S. Pharmacopeia. They were unanimously adopted:

WHEREAS, The decennial edition of the United States Pharmacopeia has just been published and issued by the board of trustees of the United States Pharmacopeial Convention,*

WHEREAS, This revised Pharmacopeia embraces many new forms of value for use both in therapeusis and in prevention of epidemic disease, and represents the best thought and labor of experts on these matters; therefore, be it

Resolved, That a translation of this United States Pharmacopeia into the Spanish language would prove of great benefit to the medical profession and pharmacists in each of the republics represented in this convention, and further,

Resolved, That the said Pharmacopeia be referred to the several governments to report on at the next meeting in Mexico, with a view to the adoption of an international pharmacopeia for the American republics.

Etiologic Naming of Disease.

Dr. H. C. Wood addressed the convention, taking for his subject "The United States Pharmacopeia." Dr. L. O. Howard made an address on the "Geographic Distribution of the Yellow Fever Mosquito." Dr. H. L. E. Johnson read the following paper, entitled "Will Etiologic Naming of Diseases Influence Public Opinion?"

Mr. President, Members of the Conference and Guests: The principal object of sanitary and medical science and study at the present time is the prevention and limitation of disease. Pathologic, biologic and chemical laboratory investigations have made valuable advances in determining the cause and origin, transmission, scientific recognition, modification and arrest of many of the morbid processes affecting mankind and the lower animals.

Much good has been accomplished, more good will follow as a result of future labors, but before a universal acceptation and a successful practical application of the facts demonstrated in the laboratory is possible it is apparent that the lay public must be instructed and convinced.

The lay public is generally skeptical about new medical facts and discoveries, and until they appreciate the value and importance of sanitary, curative and preventive measures they will ridicule our teachings and obstruct our methods.

Legislators keep pace with the lay public and press; consequently sufficient appropriations for maintaining proper health conditions are seldom made either by a state or nation.

Generally speaking, belief on the part of the public in our theories of cause and prevention of disease is essential in our crusades for health, and to this end health matters should be made part of even a common school education and should be supplemented by systematic public lectures in terms appreciable by all. The baths gave Rome her health and vigor.

The relation of fly infection as a factor in enteric fever and tuberculosis is established, also the rôle played by the mosquito in malaria and yellow fever, but the lay public and press, notwithstanding the unanimity of medical opinion on these points, has not entirely indorsed our views or given us necessary support in our efforts to overcome these preventable diseases.

Cause and effect in each class should be clearly demonstrated to the public, and those diseases which depend for their dissemination on an intermediary host, as, for example, malaria and yellow fever, should be given a name associated with or indicating their etiology, viz.: Malarial fever should be called anopheles fever, infection or poisoning; yellow fever, stegomyia fever, infection or poisoning. Thus named, their origin would be indicated and the necessity for the extermination of the insects which cause the respective diseases forcibly suggested. The medical profession and the public are mutually dependent for the promotion of sanitation and elimination of disease, and co-operation in these matters depends largely on a liberal education of the public along the established health lines.

The following delegates were elected as vice-presidents of the congress: Dr. Eduardo Moore, of Chile; Dr. Juan J. Ulloa, of Costa Rica; Dr. Juan Guiteras, of Cuba; Dr. Miguel Alcivar, of Ecuador; Dr. Joaquin Yela, of Guatemala; Dr. Eduardo Licéaga, of Mexico; Dr. L. Medina, of Nicaragua; Senor Emilio Joubert, of Santo Domingo; Dr. H. L. E. Johnson, of the United States; Dr. Eduardo Lavorería, of Peru; Senor Bermudez, of Uruguay; Senor Veloz-Goiticoa, of Venezuela.

The convention also elected Drs. Wyman, Moore, Licéaga, Ulloa, Guiteras, Rhett, Goode, of Mobile, Ala., and A. H. Doty, of New York, members of the International Sanitary Bureau for a period of three years. This bureau will be clothed with semi-executive and judicial powers by the several governments and will decide on all questions relative to international sanitary arrangements.

October 13 and 14 were entirely devoted to the consideration and adoption of the sanitary agreements (which will appear next week).

(*To be continued.*)

*Verbiage slightly corrected, because of error in name, not discovered till resolutions had been passed.

NEW YORK STATE MEDICAL ASSOCIATION.

Annual Meeting, held at New York City, Oct. 16-19, 1905.

(*Continued from page 1257.*)

Amalgamation Approved.

Further details of the action taken by the New York State Medical Association at its annual meeting, on October 17, to which we referred editorially last week (page 1253), are as follows:

Resolutions were presented authorizing a committee to carry out the consolidation, and DR. W. R. TOWNSEND moved that the resolutions be adopted. They are as follows:

Resolved, That the New York State Medical Association hereby approves and adopts the agreement of consolidation prepared by the joint committee of conference appointed by the New York State Medical Association and the Medical Society of the State of New York, dated Jan. 23, 1904, and heretofore adopted at the regular and a special meeting of the Medical Society of the State of New York in the year 1905, a copy of which is hereto annexed. And be it further

Resolved, That a committee, consisting of E. Eliot Harris, Julius C. Bierwirth, Alexander Lambert, Parker Syms and Wisner R. Townsend, is hereby appointed, or, in case of the disability of any of them, then of such other persons as the president may appoint in his or their place and stead, to carry out the purposes of said agreement and with full and absolute power to take any and all legal steps necessary in the premises, in the place of the said the New York State Medical Association, as may be necessary, to complete the consolidation of the New York State Medical Association and the Medical Society of the State of New York.

DR. E. ELIOT HARRIS seconded the motion and said that he

believed the agreement between the Medical Society of the State of New York and the New York State Medical Association was fair, just and equitable. The plan of reorganization of the consolidated state body is the plan of organization of the New York State Medical Association. The essential features of that plan are, first, that every member of the county medical society shall be *ipso facto* a member of the state society, and every member of the state society shall be a member of the county society; second, the constituent county societies shall elect annually the members of the house of delegates, which shall transact all the business of the consolidated society; third, there shall be a constitutional provision for a referendum on all questions referred by, or taken from, the house of delegates, and the vote of a majority of the whole association shall be binding on the house of delegates, the general meeting, and every member of the society. The permanent members of the Medical Society of the State of New York and the privilege they enjoyed of continuing as such members after they arrived at the age of 60 without the payment of dues have been excluded from the agreement and they are now compelled to go back and seek membership in their societies in order to be members of the consolidated body.

All the rights, powers and privileges of the New York State Medical Association are to be enjoyed by the consolidated society, and all the obligations and liabilities of the New York State Medical Association shall be assumed by the consolidated Medical Society of the State of New York. The agreement protects the rights of members of the New York State Medical Association by making the length of time of membership in the association count as equal time of membership in the society in determining the eligibility for office. The dues will be assessed pro rata from the date to which they are paid in the association, and all members of the association will be specially notified of the date set for the reorganization of the county societies so as to make their by-laws agree with the constitution and by-laws officially known as Exhibit B of the agreement. The journal and directory are not part of the agreement, as they do not belong there, but should be considered in the house of delegates of the consolidated body. They do not appear in the by-laws of the New York State Medical Association, although we have had a special committee on by-laws for several years past.

The ethical question is cared for by the referendum, which is ordered by the court in Section 7 of the agreement. It is to be fairly and squarely decided by a majority mail vote of the full membership of the consolidated body, which is good American doctrine.

It now remains for this association to be true to itself and to carry out the broad principles embodied in the agreement by recording its vote in favor of the resolutions now before you in the interest of the medical profession of this state and, through this state, of the United States.

DR. EDWARDS, of Syracuse, moved to strike out the referendum part of the agreement, but later withdrew his motion.

DR. KAUFMAN, of Onandaga County, said that last year he opposed the amalgamation in the courts, but he came to the meeting this year with all the proxies from his county in favor of the agreement to consolidate the two state bodies.

DR. JOSEPH D. BRYANT stated that, as president of the Medical Society of the State of New York, he sent out 6,100 copies of the Principles of Medical Ethics to the members of the society, who would now be ready to vote intelligently on the question of their adoption as provided in the agreement.

DR. JAMES G. ORTEN, of Binghamton, a former president of the association, said he would be glad to be enrolled as a member of the consolidated society.

The roll of membership was called and in proper legal form the vote was recorded on the question of the adoption of the resolutions, which included the agreement and the new constitution and by-laws. There were 1,814 members whose dues were paid and who, therefore, had a right to vote. Each one had been legally notified of the proposed meeting and the action to be considered; 1,517 voted aye, or in favor of the resolutions either personally or by proxy; 295 did not vote; 2 voted against the adoption of the resolutions.

Thus every known legal requirement was observed in notifying members of the annual meeting and in recording their vote on amalgamation.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Annual Meeting, held in Scranton, Sept. 26-28, 1905.

(Continued from page 1272.)

Teaching the Deaf Child to Hear.

DR. G. HUDSON-MAKUEN, Philadelphia, referred to cases reported in the beginning of the last century by Itard and Toynbee of marked improvement in the hearing of deaf persons as a result of so-called aural gymnastics. Urbantschitsch found the use of musical instruments to be of value in diagnosis, and in one of Dr. Makuen's cases the piano furnished the only sound to which any response was given. The exercises were commenced with sounds similar to those of which the patient showed some appreciation, when the sounds of the human voice were gradually taken up. Dr. Makuen enumerated the following conclusions of his observation and treatment: 1. The hearing of the deaf child may be greatly improved by the systematic use of aural gymnastics; 2, the speaking voice used in close proximation to the ear is the most effective form of aural gymnastics for children; 3, the training of speech should be carried on simultaneously with the hearing exercises; 4, the degree of success attained will depend largely on the patience and skill of the teacher.

Address in Hygiene and State Medicine.

DR. G. W. WAGONER, Johnstown, said that sanitary work, to be effective, must have back of it an authority, either assumed or delegated. The people must believe that it is necessary and have faith in the competency of those who undertake the work. The great value of sanitary knowledge is well illustrated in the work of the State Board of Health following the Johnstown flood. He reviewed the law "creating a Department of Health, and defining its powers and duties," recently passed by the Pennsylvania legislature. If the law is executed in an impartial, kindly and wise manner, it will deserve the cordial support of all, but if its opportunities for tyranny are taken advantage of the public will compel its repeal. It is the physician's duty to stand between the rigors of the law and the public as an advisor, a mediator and as an instructor of the people that they may accept the results of its enforcement.

Protective Inoculations Against Typhoid Fever.

DR. D. H. BERGEY, Philadelphia, said that the value of protective inoculations could only be determined by carefully following out the health of inoculated as compared with the health of uninoculated persons living under the same conditions. It was observed that the reduction in the incidence of typhoid fever among those inoculated by the Wright method varied greatly in different troops, also in regard to the number of injections made. In some instances the incidence was reduced one-half, while in others there was a reduction varying from a sixfold to a twenty-eight-fold reduction. The case mortality among the inoculated as compared with the uninoculated was reduced more than 50 per cent. While the method was considered of value by Dr. Bergey, he maintained that there should be no less energy used in eradicating all known sources of infection by the well-established means known to sanitarians.

Pain of Obscure Origin Simulating Neuritis, Neuralgia or Organic Lesions.

DR. JOHN H. MUSSER described illustrative cases and said that in the elucidation of such cases a thorough study should be made of the nerve itself, of the spinal cord, of the sensory and motor phenomena and of the reflexes of all kinds. In connection with a consideration of possible lesions along the course of the nerve trunk the anatomic conditions must be recognized; bony, vascular and muscular lesions must be considered before a definite diagnosis is made. The general phenomena attendant on the case should be studied and too much

reliance should not be placed on sedative drugs. Dr. Musser is so thoroughly convinced of the frequent surgical source of pain that, generally speaking, he would rather resort to the knife, even though he sometimes did it wrongly, than to the hypodermic needle.

Case of Malignant Lymphoma with Autopsy.

DR. J. A. LICHTY, Pittsburg, reported the case of a patient aged 67 who had been sick two years. There was primary enlargement of the spleen, absence of leucocytosis, gradual decrease of leucocytes, anemia, comparatively large number of erythrocytes; presence of pigmentation and of subcutaneous hemorrhage; absence of enlargement of lymph glands; no history of malaria, leukemia, syphilis or cirrhosis of the liver. In the course of the disease there occurred enlargement of the liver and ascites. A diagnosis of splenic anemia was made. At autopsy there was found a great infiltration of lymphoid cells in the liver and the spleen, and the lymph glands about the coeliac axis were enlarged. He concluded that the diagnosis of splenic anemia should be made with great reservation, and that it is more than likely that at present it is made too often.

Chronic Rheumatism.

DR. CHARLES W. PAINTER, Boston, stated that his classification of chronic rheumatism is based on the etiology, the clinical course and phenomena and the pathology of the disease. He divides chronic rheumatism into three groups. In the first group, which seems to be associated with some infective organism, the joint manifestations are acute in character, more or less rapid in their development, and are accompanied by constitutional symptoms characteristic of an infection. The second group, the atrophic, is not inflammatory either on onset or progress, and seems to be associated with some metabolism of the body. This disease is more common in women and in young adult life and is associated often with nervous shocks. In this group lesions are found in the cartilage and bone as well as in the soft parts, thus differing from lesions in the infectious type. In the third group, the hypertrophic, he placed Heberden's nodes, morbus coxae senilis, and similar lesions occurring in the spine, the knee, the elbow, etc., the lesions being characterized by a hypertrophy of cartilage about the joint lines and subsequently a true bone formation which is permanent and gives rise to mechanical disturbance more than to any constitutional disability. Dr. Painter commended his classification as a useful working hypothesis, one which would do away with the necessity for indiscriminately prescribing the salicylates for the interior and the oil of wintergreen for the exterior, and the statement that the condition was chronic rheumatism for which nothing could be done.

DR. JAMES J. WALSH, New York City, emphasized the necessity for individualization, and to recognize the fact that under the group of chronic rheumatism there were a number of diseases which could be benefited by medicine only when separated. Referring to occupation neuroses he asserted that there was not a single occupation in which a person performed a habitual motion which would not cause pain around the joints thus associated. A change in the barometer, he said, would cause pain in a tooth, if it happened to be bad, a pain in the arm, if it were overworked, and such pain is not greatly different from that which is called rheumatism.

DR. DEFOREST WILLARD thought it the bane of the medical profession that pains were called rheumatism without making any diagnosis relative to the cause of the symptoms. He has seen cases which had been allowed to go to bone destruction and were still treated for rheumatism.

Diagnostic Value of Blood Cultures.

DR. DAVID L. EDSALL, Philadelphia, said that in cases of bacterial infection in which the bacteria get freely into the blood the cultures have been of much value. A case of mastoid disease was cited in which it was not thought by the ear specialist that there was sufficient evidence of mastoid disease, but a positive culture of colon-like bacillus was found. In a series of gynecologic and obstetric cases, in which the local source of infection could not be found, blood cultures revealed an abscess in the wall of the uterus.

Some Color Comparisons in Medicine.

DR. HENRY E. WETHERILL, Philadelphia, called attention to an improved hemoglobin scale called the ante-mortem blood color scale. The advantage claimed for it was that it gave the true percentage of hemoglobin. Another scale determined the weight of the perspiration; another the color of the feces. Other scales were for the determination of the color of postmortem blood and of the urine. Another scale was an improvement on Bell's scale for testing the amount of hydrochloric acid in the gastric filtrate.

Address in Neurology.

DR. E. E. MAYER, Pittsburg, discussed the limitations of psychology and biology to explain clinical psychiatry. A plea was made for physicians to recognize mental diseases as a part of general medicine and to study them. He considered neurasthenia as always being a psychasthenia and hypochondriasis as being only a symptom of psychasthenia.

Insanity in the Aged.

DR. CHARLES W. BURR, Philadelphia, spoke of the difficulty of determining the mental condition of the aged, because there is no dividing line between normal and pathologic senility. The best rule to follow is to discover whether the man knows what he wishes to do, whether he is competent to recognize the duty he owes toward his relatives, and is not swayed by momentary passion or delusions. He also spoke of the frequency of acute insanity in old age (mania and melancholia), and stated that the outlook as to cure was almost as good as in younger people. While it is true that physical and mental old age run along together, yet the saying that "a man is as old as his arteries," Dr. Burr believes is not true in every case. He said that there are a certain number of people who become prematurely senile while the physical organism remains in fairly good condition. In the consideration of postparalytic insanity, he thought that it is perfectly possible for an old man, after an ordinary hemiplegia, to remain in fit mental condition to take care of himself, but if there was also sensory aphasia or an extreme diffuse arterial disease there would surely be more or less dementia. Occasionally apoplexies in old people are ushered in with a period of excitement.

Brain Abscess with Sudden Exophthalmos and Blindness.

The condition in Dr. Heckel's case developed suddenly in a married woman, 22 years of age, whose previous history had been negative, except that suspecting herself to be pregnant, she had been persuaded to take some patent preparation with the object of producing an abortion. The condition which attracted most attention was the sudden exophthalmos and blindness, which was complete within a few hours. Curettage showed no signs of pregnancy. A typical septic temperature zigzagged between 105 and 99. In addition to the exophthalmos, hemorrhages appeared in both anterior chambers. Death occurred eight days after the appearance of the exophthalmos. The patient did not complain of headache until the day previous to death. Streptococci were found, but no abscess formation in any part of the body. In the left frontal lobe there was a cavity about the size of a hen's egg apparently filled with purulent fluid, but which was demonstrated to be a clot. There was no limiting membrane, but the cavity was studded with small millet seed granulations so that even after the thorough autopsy a positive diagnosis was doubtful.

Clinical Examination of the Feces.

DR. J. DUTTON STEELE, Philadelphia, employed the method of Adolph Schmidt in these examinations, with a few modifications. He said that this so-called functional examination of the stools, has its limitations when used as a method of diagnosis, but is of great value in following the digestibility of various food-stuffs in determining the proper diet in any given case. The method is simple and easy to carry out, and bids fair to be an accurate means of watching the power of the gastrointestinal tract to digest certain food; hence would be of great use therapeutically and, in a general way, of considerable value in diagnosis.

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Diaphragmatic Hernia with Complete Extrusion of Stomach and Spleen.

DR. J. BRUCE MCCREARY, Shippensburg, detailed the history of the case, that of a man of 22, who fell in collapse after having run a footrace. His usual health was not recovered until the end of two years, when he still, however, experienced a feeling of pressure in the spleen, and chronic diarrhea was present in varying degrees for six years. Eight years after the first injury he was thrown from a carriage and had a return of the same symptoms. Three months later he had an enormous internal hemorrhage. For three years the hemorrhages continued, at intervals. A diagnosis of diaphragmatic hernia with partial extrusion of stomach, dislocation of heart and pneumogastric fistulæ was made and verified by autopsy. During the illness of the patient relief from the extreme pain was given for a year by stomach lavage. By keeping the stomach clean the generation of gases had been prevented.

Treatment of Mediastinal Carcinoma by the X-Ray.

DR. G. E. PFAHLER, Philadelphia reported six cases following carcinoma of the breast, the first occurring in a woman, aged 36, sixteen months after removal of the primary growth. X-ray treatment was instituted and the patient is now able to do her ordinary work. The second case was a secondary growth appearing three years after the removal of the primary lesion. This was treated on several occasions for a period varying from six weeks to three months, and the patient has now apparently recovered. The third, fourth and fifth cases were women, aged, respectively, 62, 52 and 62 years, in whom the treatment was followed by good palliative results.

DISCUSSION.

DR. JAY F. SCHAMBERG, Philadelphia, said that in malignant disease surgical interference should be employed in operable cases, and the *x*-rays used as a postoperative measure and in inoperable cases as a palliative agent.

DR. JOHN C. PRICE, Scranton, emphasized the importance of careful individual regulation of the strength and quality of the rays, and deprecated the fact that they were too often employed by the general practitioner without sufficient regard to these facts.

DR. ERNEST LAPLACE, Philadelphia, believed that during the early stages of malignant diseases, if the cells were of a low grade, the *x*-ray possibly would destroy them.

DR. CHARLES P. NOBLE, Philadelphia, stated that he believed that the field for this work was in postoperative and palliative measures, rather than in operable cases in the first instance.

Conservative Treatment of the Enlarged Prostate.

DR. H. M. CHRISTIAN, Philadelphia, stated that the patient when first seen by the surgeon would present one of the two conditions: (1) Good general health, moderate enlargement of the gland, with increased urethral length, partial retention, residual urine, varying from three to six ounces, urine sterile or slightly cloudy, indicating slight infection of the bladder. Catheter used without difficulty once or twice daily. (2) General health fair, marked enlargement and increased urethral length, complete retention, absolute catheter life, chronic cystitis and the introduction of the catheter difficult and painful. He did not view prostatectomy, either suprapubic or perineal, as a minor operation, and while recommending it for the second class, felt that its use should be limited to those cases in which there was acute or chronic cystitis, painful or difficult insertion of the catheter or the occupation of the patient prevented the use of this instrument. He stated that careful attention should be given to the selection and sterilization of the catheter and the instruction of the patient in its use, and considered the soft rubber and single or double elbow silk-woven instruments to be the only safe ones for home use.

DISCUSSION.

DR. H. R. GAYLORD, Buffalo, felt that the reason the mortality is so high in prostatectomy operations was due to the fact that the cases came too late. He believed that there is great danger from the continued use of the catheter, no matter how careful the patient might be, and urged operative interference, unless the cases were in too poor condition at the time they came to the surgeon to warrant this course.

DR. RICHARD H. GIBBONS, New York recommended operative interference, discussing various operations, including the Reginald Harrison and the Parker Sims method, and remarked that by the latter the largest prostate could be removed in a short time. He urged that the operation be done under cocain anesthesia as soon as a collar is discovered about the urethra.

DR. WILLIAM L. RODMAN, Philadelphia, recommended that operative interference be the rule, rather than the exception, especially if the man is not more than 55 or 60. The operation of Hunter Maguire he considers the most appropriate one. The danger of infection or malignant disease is too great to warrant the continued use of the catheter.

Recent Results in Cancer Research which Bear on the Parasitic Theory.

DR. H. R. GAYLORD, Buffalo, reviewed the literature regarding the transplantation of tumors. He referred to one operation reported by Ehrlich, in which the tumor started by inoculation from a carcinomatous growth that at the thirteenth generation developed into a sarcoma. Spontaneous recovery took place in about 50 per cent. of the cases inoculated. He also referred to experiments made by injecting the serum from immune mice, or by mixing the blood of immune mice with the germ as prepared for inoculating others, which would prevent its taking any effect. He gave a detailed account of the experiments conducted under his direction with a view to proving the germ theory.

DISCUSSION.

DR. JONATHAN WAINWRIGHT, Scranton, referred to the possibility of curing cancer by means of the injection of serum from some immune person, and felt that the experiments would be very valuable, if such a serum could be obtained.

DR. WILLIAM L. RODMAN, Philadelphia, congratulated the author on the work he had done, but felt that it was incumbent on the advocates of the germ theory of the origin of cancer to bring more evidence to bear on the point. As a contradiction of the germ theory he referred to the fact that there was no reported case of a physician becoming infected while doing an operation.

DR. ERNEST LAPLACE, Philadelphia, stated that he believed there were two things necessary to the development of cancer, a proper seed and a fertile soil; and that a receptive soil would develop the condition, while an unreceptive one would not.

Fractures of the Head of the Radius.

DR. T. TURNER THOMAS, Philadelphia, stated that a search of the literature on this subject revealed only 48 reported cases, six of which were diagnosed during life; and that he had been able to secure from four skiagraphers in Philadelphia records of about 55 cases. He mentioned as important diagnostic factors interference with rotation and supination, localized pain and tenderness, together with a history of falling on the hand, and recommended as a treatment immobilization for three or four weeks, after which passive movements should be begun gently.

What Constitutes Operability in Cancer of the Uterus.

DR. ELLA B. EVERITT, Philadelphia, stated that the best results would be accomplished in three ways: 1. By bringing about conditions favorable to earlier diagnosis. 2. By improvement in operative technic. 3. Clear and widespread knowledge of when to apply radical measures and when to be content with palliative relief. Among the factors requiring consideration under the latter heading are (a) the proportion of the uterus involved, (b) the extension behind the uterus, and (c) the operative measures available. The question of prime importance should always be what is best for this individual patient. Operative interference is justifiable only when a radical cure or at least a prolongation of life under more favorable circumstances can be expected.

(To be continued.)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-first Annual Meeting, held at Indianapolis, Oct. 10-12, 1905.

(*Continued from page 1270.*)

Retroperitoneal Teratoma.

DR. C. M. NICHOLSON, St. Louis, described a teratoma of the abdominal cavity, remarkable not only because of its rare occurrence, rapid growth, and total absence of symptoms until three weeks before death, but because with its substance had been found a chorion epithelioma. The following is the author's report of the case:

Aug. 5, 1905, he was consulted by C. W., a healthy-looking, well-developed young man, 21 years of age, who complained of one symptom—fainting—which had occurred twice during the preceding week. He had attended to his business until August 4, when he quit work, fearing an accident during his trips as superintendent down into the mine. On inspection the abdomen appeared normal; pressure over the region of the gall bladder enabled the examining finger to outline a pear-shaped body. In the median line beneath the rectus abdominis, extending from a point four inches above the pubes to the lower margin of the right lobe of the liver was an immovable mass of definite form. The line of dulness was continuous between the pear-shaped body and the mass in the median line. Although the growth measured four inches in width, no intestinal disturbance had resulted. Three weeks later the patient vomited and complained of great pain after eating. The vomiting became more frequent and the pain more severe with each succeeding day. He saw the patient September 3 and the following morning made an exploratory incision, revealing a growth extending from the right kidney to the last dorsal vertebra, thence downward to within two inches of the pubes. It was firmly attached to the median line posteriorly and to the kidney externally. The posterior peritoneum was cut through and the mass found to be enclosed in a fibrous capsule, which was sewed to the anterior layer of the peritoneum and a portion of the growth removed. The patient sat up at the end of the first week, but continued to complain of great pain. He died two weeks after the operation.

Postmortem examination was made by his assistant, Dr. S. S. Stahl, whose report in part is as follows: "On opening the cavity of the abdomen and cutting through the posterior peritoneum and transversalis fascia, a fibrous capsule enclosing a semi-solid mass and adherent only in the median line and to the right kidney, was found. Not without much difficulty could the tumor be removed, so intimately was it attached to the structure, anterior to the vertebral column. The abdominal aorta from the first dorsal vertebra to the fourth lumbar was closely attached to the growth. The gall bladder was distended, evidently due to pressure on the common duct. Neither the lumbar glands nor the kidneys were enlarged, although the right kidney was adherent to the tumor. The liver, though very slightly enlarged, showed evidence of involvement. The heart and pericardium were normal. The lungs contained 200 or 300 nodules."

The tumor weighed a little less than two pounds. It was right-angled and lobulated, the lobules being smooth and extending in different directions. On cutting, the tumor was soft, the anterior inferior extremity being partially cystic. Some of the cysts were as large as a hazelnut. The remainder of the growth appeared solid. The outer surface of the tumor was covered with a distinct fibrous capsule. Paraffin section of the Zenker fixed tissue showed a very complicated mass. Portions of organs were found corresponding in embryonic origin to all the germinal layers. Skin, cutaneous organs, central nervous system, peripheral nerves, represented the epiblast. Mucous glands, tubes, cysts with epithelial lining, were indicative of the hypoblast. Bone, cartilage, fibrous tissue, constituted the mesoblastic structure.

The author considered at length the different theories that have been advanced in the past to account for the origin of teratomata.

DISCUSSION.

DR. JOSEPH RILUS EASTMAN, Indianapolis, said that he has had a remarkable experience in relation to tumors of this character. He has had two cases of precoccygeal teratomata, but no cases of inclusio fetalis, as he considered the case of Dr. Nicholson. In the first there was presented the clinical picture of a complete external fistula in ano. Long hairs protruded from both orifices, but when the roof of the canal was split up it developed that there was a cavernous space which was lined with epithelial membrane and this proved to be in either case a precoccygeal teratoma or dermoid. He related a case in which his father, the late Dr. Joseph Eastman, had removed almost a complete skeleton from the abdominal musculature in a man of middle age.

DR. NICHOLSON said that chorion epithelioma in a retroperitoneal teratoma is extremely rare, and he has been unable to find a similar instance in the literature. Examination of the microscopic slides demonstrates clearly the presence of tissues from the three germinal layers.

Some of the Fallacies in the Clinical Diagnosis of Gonorrhea.

DR. G. FRANK LYDSTON, Chicago, discussed some of the more dangerous of the fallacies in the diagnosis of this disease, with especial reference to prognosis as regards the infectiousness of a given individual to other and healthy persons with whom sexual contact may occur. He considered, first, the possibility of excluding infectiousness in the case of a woman under suspicion, or who is known to have had gonorrhea. That the most dangerous type of infection of the female is that in which the external manifestations of the disease are absent or wanting, is coming to be well understood by both gynecologic and genitourinary specialists. The explanation of the relatively great danger of infection of others by such subjects is not so thoroughly understood as it should be. Gonorrheal urethritis in the female, when it has assumed the chronic form, may present no secretion whatever on external examination. There may be little or no vaginal, cervical or uterine discharge, and even such as there is might on examination fail to disclose the micro-organisms of gonorrhea. A swab or probe passed into the urethra may return perfectly clean. Notwithstanding this apparent lack of infection in the urethra, the mucous glands may be involved, and under the influence of sexual excitement and the mechanical effect of coitus, the physiologic hypersecretion may convey to the meatus gonococci in abundance. The result is sufficiently obvious.

The author presented clinical facts which would seem to make it impossible for a physician to say in a given case that a woman is free from infection. He thought this one of the strongest arguments against regulation and medical inspection of prostitutes. He entertains serious objections to the medical profession constituting itself an assurance society for the protection and promulgation of the social evil, but aside from this scruple there remains the fact that no reliable system of inspection or examination can be devised. He is firmly convinced that in many cases of infection of healthy women by a latent gonorrhea of the husband, mixed infection is responsible, and the resulting pathologic condition in the female is nonspecific. Its being non-specific, however, does not preclude the possibility of its becoming very serious. We have no tests at the present time which will enable us to give a positive opinion of the infectiousness of a given case of suspected latent gonorrhea. As already suggested, the clinical history in many cases is more important than the laboratory study of the case, and a careful combination of both methods of study is always essential. The physician should be as chary of assuming responsibility in advising a gonorrheic in the matter of matrimony as he should be in advising syphilities under similar circumstances.

Irritation of the Bladder.

DR. A. RAVOGLI, Cincinnati, stated that in many abnormal conditions of the genitourinary organs and also of the urine itself, this affection comes on as a symptom in the form of frequent micturition. This symptom can be produced by a number of intravesical and extravesical affections. Urination is so increased that it seems the bladder can not tolerate the

presence of urine. In some cases it occurs in the daytime only, in others at night, and in severe cases often in the day as well as in the night. The intervals between urination may be two hours, but in some cases the patient urinates every quarter of an hour, or even every five minutes. The patient loses sleep, wastes away, and is scarcely able to attend to his occupation.

In reference to the causes, the urine may be the cause of irritation on account of its quantity or its quality. It may be too concentrated, contain urates, phosphates, sugar, etc., which maintain or keep up irritation of the bladder. The bladder itself may be the cause on account of an hyperemic condition. This hyperemia may be the result of vesical or of extravesical troubles, phimosis, urethritis, prostatitis, neoplasms, pericystitis, vulvitis, nephrolithiasis, etc. In other cases it is a pure neurosis, the consequence of epilepsy, hysteria, eclampsia, etc. Since the urethroscope and the cystoscope have been in use, cases of irritation of the bladder without pathologic condition have greatly diminished, and in most of them there has been found either granulation or hyperemia of the mucous membrane. There are two kinds of irritation of the bladder, one of which is a local neurosis, and the other which results from pathologic alterations of the bladder or of the urethra. The detection of the causes will assist materially in selecting appropriate treatment.

Prostatectomy.

DR. W. D. HAINES, Cincinnati, said that two patients, aged respectively 42 and 59 years, with small indurated prostate with obstruction, occurring in his practice, did well after perineal section and the removal of the prostate gland, in that the catheter was abandoned and a troublesome cystitis relieved. One of the cases suffered incontinence for a period of three months after operation, and the cure was complete, as residual urine was found in both cases, and this despite easy bladder access by the sound or catheter. He condemns the use of metallic instruments in prostatics for diagnostic purposes, or for the relief of urinary retention, as the danger of perforation and infection far outweighs the meager information or temporary relief thus obtained.

One can hope for complete cure in 30 per cent. of the cases submitted to prostatectomy, namely, release from catheter bondage, relief from bladder complications and restoration of urinary function. In his experience with perineal prostatectomy seven cases have been functionally cured, nine show residual urine, some of whom have had attacks of cystitis and dribbling, and five of these are suffering from incontinence six months to one year and a half after operation. Two cases required secondary operation, one for stone, and one for perineal fistula, making a total of sixteen cases with ages ranging from 42 to 79 years without mortality. While these results are far from ideal, the unfavorable physical condition present in the majority of them will in a measure militate against criticism as to the final outcome of this series.

Operative Treatment of Tuberculous Joints.

DR. HORACE J. WHITACRE, Cincinnati, advocates four kinds of operations for tuberculous joint disease. First, osteotomy for the removal of an epiphyseal focus; second, erasion or arthrectomy of those cases, particularly in the young, where the focus is circumscribed and a fair amount of synovial membrane remains; third, excision; fourth, amputation. Six cases of rather extensive tuberculosis of the knee were treated by arthrectomy or erasion. In four of these cases a complete cure of the disease with a useful stiff joint and good position was obtained. In three, a slight amount of motion, giving some assistance to the patient in locomotion, was regained. In two, amputation was subsequently resorted to. These subsequent amputations occurred in patients who passed from his observation very soon after operation. They undoubtedly represented recurrence in a spot where the dissection was not sufficiently thorough. Excision for a tuberculous joint has been reserved in his practice for those cases in which the bone ends are damaged.

President's Address.

DR. BRANSFORD LEWIS, St. Louis, considered two subjects: 1, Some unrecognized responsibilities of press and state in conserving health; and 2, the prophylaxis of the so-called venereal diseases. He called attention to quack medical advertising in newspapers and magazines, and said that news managers provide against discrimination frequently by making unworthy advertisements resemble as closely as possible the regular news material of the paper, or by setting it up as telegraphic matter. He thinks the press is *particeps criminis* in presenting such fraudulent material. There is a widely disseminated and growing belief that matters pertaining to sexual physiology and pathology should be taught in a simple way to the budding youth of both sexes in the course of their regular education, in order to place them in a position to resist the temptations that beset young life, by the clearer understanding that such instruction will afford. He would make use of educational channels of all sorts to spread the information desired in a scientific, dignified, truthful and wholesome manner, and such instruction will be received in the spirit in which it is imparted. It is primarily to the education of the people to which we must look for providing either the required legislation or the belated impulse or self-respect and decency on the part of the newspapers in eliminating quack advertisements.

Another subject which he considers well worthy of attention is the determination of practical methods of protecting the people from the far-reaching and disastrous effects of those diseases generally termed venereal, but which are not uncommonly entirely innocent in their development. He referred to gonorrhea, syphilis and chancroid. These diseases prevail to an extent undreamed of by the people and those in control of the public health of the country. He believes nothing is to be accomplished by prolonging a discussion as to the propriety of legal control and the regulation of prostitution. Instead of trying to do what is impossible, to corral and disinfect all prostitutes, he would teach the public the dangers of prostitution, the dangers of the diseases to which it leads, the prevalence of such diseases in daily life, how they are acquired innocently, how they are to be avoided, and the necessity of seeking relief from them as soon as possible when they are acquired. A campaign of education must be the chief reliance, and the medical profession, followed by the ministry, instructors in institutions of learning in general, philanthropists and leaders in public work, will have to be counted on as the purveyors of such education.

Present Status of Surgery of the Stomach.

DR. W. D. HAGGARD, Nashville, Tenn., said that a discussion relative to operation for stomach lesions now is similar to that in regard to appendicitis twelve or fifteen years ago. Then only the desperate cases were submitted to operation. It is so now with many stomach cases. This, however, must yield to the logic of results, and in a short time the profession generally will advise early operation as they now well nigh universally do in appendicitis. Improved technic, low mortality and satisfactory end results will inevitably do away with the empirical treatment of occult intractable stomach troubles. The typical indication for operative interference is obstruction of the pylorus from an open or cicatrized ulcer causing dilation of the stomach, with stasis of food. The short circuiting operation of gastroenteric anastomosis finds its ideal operation here, and has given the most beneficent results. It is the *fons et origo* of the present group of drainage operations, as well as other gastric procedures, and is altogether the most perfected and satisfactorily employed operative device. The other complications of ulcer requiring operation were pointed out, as (1) perforation, (2) hematemesis of chronic ulcer. Operation is advised in repeated acute hemorrhage or in constantly recurring small hemorrhages. Other indications are found in the following groups of cases: (3) Obscure and persistent stomach troubles, with a long history of dyspepsia culminating in hemorrhage after it has been controlled by medical means and the patient put in the proper condition for operation. (4) Cases of chronic intractable dyspepsia, even without dilatation, which fail to yield to proper medical treatment and are not due to a general visceral ptosis.

Aside from malignancy, chronic ulcer and its complications furnish most of the indications and the majority of cases. It is not impossible that the bulk of cases of inveterate dyspepsia is really due to ulcer. That it is found postmortem very many more times than it is recognized clinically.

(To be continued.)

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fourteenth Annual Meeting, held in Detroit, Sept. 26-28, 1905.

(Continued from page 1195.)

Delegates.

Among the foreign delegates accredited to the association were: Surgeon-General S. Suzuki, imperial Japanese navy; Drs. M. W. P. Chung, chief surgeon Chinese Government Hospital; Tsin Ying Young, surgeon-major imperial Chinese army, and Ho Kan Yuen, chief surgeon imperial Chinese navy; Col. H. Mareschal, surgeon in the French service; Lt.-Col. J. T. Fotheringham and Maj. E. B. Echlin, of the Canadian medical service; Col. William John Read Rainsford, Royal Army Medical Corps; Fleet Surgeon F. Lloyd Thomas, Royal Navy, and Lt.-Col. Alejandro Ross, of the Mexican Army. Brigadier-General C. H. Todd, Owensboro, Ky., president of the Association of Medical Officers of the Army and Navy of the Confederacy, was also present as delegate from that association.

Honorable Mention.

In the competition for the Seaman prize the papers of Maj. Frederick Smith, R.A.M.C., Major Charles E. Woodruff, surgeon, U. S. Army, and Assistant Surgeon William Colby Rucker, United States Public Health and Marine-Hospital Service, received honorable mention, in the order named.

Senn's Welcome.

COL. N. SENN, Surgeon-General of Illinois, founder of the association, held an impromptu reception at the first meeting of the association on his return from a summer spent in Greenland and the arctics with Commander Peary's expedition.

Captured at Mukden.

COL. VALERY HAVARD, assistant surgeon-general, U. S. Army, military attaché with the Russian army in Manchuria, who was captured when the Russians evacuated that place, was present and interestingly detailed his experiences.

The Stokes-Seaman Controversy.

One of the most exciting features of the convention was the attack made by Surgeon Charles F. Stokes, U. S. Navy, on Major Louis L. Seaman, U. S. V., in which he bitterly arraigned Major Seaman for misstatements and misleading figures in his paper read last year before the association at St. Louis. He charged that Major Seaman's assertion that the proportion of loss by gunshot wound to the loss by disease in the Spanish-American war in a campaign lasting but six weeks was as 1 to 14 was incorrect. He stated that the report of the Secretary of War for 1898 shows that 270 died of wounds and 400 of disease in that campaign, a proportion of 1 to 1½. Dr. Seaman placed the losses from disease at 3,862. He also made the proportion of battle casualties to disease in the Civil War as 1 to 5, while the proportion, as shown by the official history, was 1 to 2. Dr. Stokes also attacked Major Seaman's statement that beri-beri was almost unknown among the Japanese and produced figures showing that of 5,609 cases of illness among Japanese troops in Manchuria 5,070 were of beri-beri, that the loss to the effective forces of the Japanese before Port Arthur from beri-beri alone was 25,000, and that in the second Japanese army of three divisions with 19,000 men in each there was a sick list of 24,642 in seven months, figures not varying greatly with those of other armies under similar conditions. He also attacked Dr. Seaman's knowledge of bacteriology, military hygiene and principles of asepties and antiseptics.

Dr. Seaman was not present when this arraignment was made, but prefaced the reading of his paper by a caustic reply to the charges. He claimed that Surgeon Stokes had emasculated the extracts from his writings and addresses which had been quoted, gave the source of every statement and of all the statistics for which he was criticised, and made a strong argument, not against the personnel of the medical department of the army, but against the lack of business system under which the medical department was conducted, which, he said, was responsible for many of the abuses and for the bad record as regards illness made in the Spanish-American war.

The Real Triumph of Japan.

MAJOR LOUIS LIVINGSTON SEAMAN, U. S. V. E., in an interesting paper, entitled "The Real Triumph of Japan, or the Conquest of the Silent Foe," stated that, without minimizing the splendor of Japan's victories on land or sea, he must unhesitatingly assert that the greatest conquests of Japan were the humanities of war in the stopping of needless sacrifices of life by disease, and that this had been done by the medical men of the army.

"It must never be forgotten," said Major Seaman, "that in every great campaign an army faces two enemies: First, the armed forces of the approaching foe, with its various machines for human destruction, that is met at intervals in open battle, and, second, the hidden foe always found lurking in every camp—the far greater and silent foe—disease."

Quoting from Longmore's tables, which are accepted as the most reliable statistics of war, he showed that for two hundred years there has rarely been a war where at least four men have not died from disease to one from bullets. In the war between Turkey and Russia in 1878, 80,000 men died from disease and 20,000 from wounds. In the Crimean war the allied forces lost 50,000 men from disease and 2,000 from wounds. In the Civil War the ratio was about 4 to 1, and in the Boer war the losses of the English from disease were appalling. In the Russian-Japanese war 52,946 men in the Japanese army were killed or died from wounds, while but 11,992 died from disease, or nearly 5 to 1.

Japan accomplished this unparalleled record by organizing, in anticipation of war, her medical department on broad, generous lines and by giving to its representatives the rank and power which their great responsibilities merited. Japan even graded her medical men as high as officers of the line and accorded them equal authority, excepting, of course, in the emergency of battle. At home she organized the most splendid system of hospitals that has ever been devised for the treatment of sick and wounded, and put into execution a more effective system of sanitation than has ever been practiced in war. He contrasted with the complete preparatory work of the Japanese medical department the action of the hero of Manila in censoring the cablegram of the chief surgeon, who had requested fifty additional medical officers and two hundred more nurses when the hospital wards were overcrowded, because such a dispatch would prove the incorrectness of his claim that he had the situation well in hand. He also cited the recalling of the order at Tampa in the Cuban campaign directing the unloading of a ship filled with medical and hospital supplies for Santiago and the substitution therefor of a load of mules. He then detailed the incident of another general officer during the Spanish-American war who, when waited on by medical officers with a protest against the use of certain water supplied to the troops, said, "When I want your advice I will send for you. Until I do, you can attend to your own business." Lastly he narrated the incident of the Secretary of War who, when inspecting Camp Wyckoff, Montauk Point, with the President, said, on looking at a glass of water, furnished the troops in this infected camp, which had been pronounced by medical officers to contain germs of disease, "Why, it looks all right to me."

The only relief that can come to these conditions of health in the U. S. Army is when the medical officers are given more authority and when the actions of young and inexperienced officers are allowed to interfere less with the workings of the medical corps. When they listen more to the advice of men like Surgeon-General Sternberg, then many of the faults of the present system will be changed.

"Until the line and staff officers of the U. S. Army," said Major Seaman, "are taught the necessity of sanitation and the medical officer is given rank and authority to enforce it, the medical department of the army must remain a humiliating

failure. Its continuance under present conditions is no less than an evidence of national imbecility."

Major William C. Borden, U. S. Army, stated that it is a melancholy admission, but that he feared, were war to come on the United States at this time, the medical department of the army would make little better showing than in the Spanish-American war. The medical force to-day is large enough for an army of 42,000, while sufficient officers are provided in the other branches of the service for an army of 100,000. "The war department," said Major Borden, "detailed five officers to accompany the Russian and Japanese armies to observe the latest method for killing, but not one to observe how lives are saved by preventing disease until the President's attention was called to it by an interview with Major Seaman, whereon he directed a surgeon with the rank of colonel to be detailed as attaché in Manchuria, which was done."

Major Charles T. Newkirk, Bay City, Mich., made an ardent defense of General Alger, and stated that in his experience in the Spanish-American war he had had no trouble in getting what he wanted from the medical supply depot and claimed that the United States had the finest army in the world and the best physicians.

Major Carlton E. Starrett, Elgin, Ill., urged that reform was needed in the medical service and cited the experience in Camp Thomas, Chickamauga, when, before the camp was a month old, the medical department had condemned it as unsanitary; but the recommendations of the medical officers counted for naught. In Porto Rico he stated that a regiment was put into an unhealthy camp, and that the medical department condemned the camp, but that until half the regiment was ill the camp was not moved.

Col. William J. R. Rainsford, R. A. M. C., spoke of the benefits to the medical department to be derived from criticism and publicity. He stated that if you educate the people you will get what you want, and not until then; that not until the public knows what is needed will the appeal be answered. He cited the criticisms of W. Ashmead Bartlett on the British medical department in the South African campaign, for which the medical department hated him. He published reports which the medical department did not like, but it was through these reports that the public became interested, and this resulted in the reform which was necessary, and which has now been attained, whereby the abuses in the medical department have been abolished and the condition of the officers of the Royal Medical Army Corps greatly improved. "So," said Colonel Rainsford, "to the man who stirred up ill feeling we owe the reforms which we got."

American Nurses in Japan.

Dr. Anita Newcomb McGee made an interesting report of her work and observation while in charge of a party of American nurses at Hiroshima Hospital, the largest military hospital in Japan. She confirmed the reports previously made that the wounded prisoners received exactly the same treatment as the wounded Nipponese, and that in its organization and practical workings the Red Cross service of Japan was far ahead of that of any other nation with which she was familiar.

(To be continued.)

AMERICAN ROENTGEN RAY SOCIETY.

Sixth Annual Meeting, held in Baltimore, Sept. 28-30, 1905.

Under the Presidency of Dr. Charles Lester Leonard, Philadelphia.

Study of Stomach and Intestines.

Dr. Henry Hulst, Grand Rapids, Mich., spoke of the value of the Roentgen ray in the diagnosis of dilatation and dislocation of the stomach and intestines. To obtain a radiograph of these organs, an ounce of bismuth is given in a pint of milk or potato soup. Two exposures are made: one in the erect and one in the recumbent position. The first is made shortly after the ingestion of the bismuth and the second is made six hours later, thus showing the size, shape and functional capacity of the stomach. If a good picture of the colon is not obtained in this way, three ounces of bismuth should be injected per rectum.

Interpretation of Lung Negatives.

Dr. George E. Pfahler, Philadelphia, said that in order to study the lungs accurately the negative must be made while these organs are at rest. A careful physical examination should precede the Roentgen examination to permit of a correct interpretation of shadows. In tuberculosis, the Roentgen ray is an aid in diagnosis and also records the progress the disease is making.

Dr. Hulst considers the Roentgen ray as a means of diagnosis of pulmonary tuberculosis of equal value as the sputum examination.

Diagnosis of Aneurisms.

Dr. F. H. Baetjer, Baltimore, believes the Roentgen examination of aneurisms far superior to any other method of examination. The diagnosis can be made earlier and more correctly, thus permitting earlier and more effective treatment. A physical examination should precede the Roentgen examination so as to detect any deformities that may exist and that would make the diagnosis of aneurism more difficult. He said that a pulsating shadow that does not disappear between pulsations is always suspicious.

President's Address.

Dr. Charles L. Leonard reviewed the past, present and future of the Roentgen ray, its identity, chemistry and physiologic action and application to medicine.

Regulation of Dosage of Roentgen Ray.

Dr. E. G. Williams, Richmond, said that the more superficial the effect desired, the closer the tube should be placed to the surface. He found that about ninety minutes' exposure, with a tube distance of ten inches, spark gap of four inches equivalent to the resistance in the secondary circuit, and the millimeter showing three-fourths of a mp., is required to produce an erythema of the surface. The safety limits are about 30 per cent. less than the number of minutes required to produce a decided erythema. The law of inverse squares helps in regulating the exposure and distance of the tube from the surface. Williams' rule is not to expose in ten days more than the number of minutes required to produce a dermatitis, giving the treatments in series of four to six exposures. To measure and record the dose of the *x*-ray, there should be noted the duration of the exposure, the distance of the surface from the platinum disc, the equivalent spark gap and the reading of the millimeter.

Roentgen Treatment of Keloids.

Dr. O. S. Barnum, Los Angeles, Cal., uses an abundance of rays emanating from a tube of high resistance and excited by a large coil. It is better to have the tube too high than to have it too low. The tube distance should be fifteen to twenty inches, depending on the thickness of the tumor. The thicker the tumor, the higher the tube, the greater the distance and the longer the exposure. He usually exposes for from fifteen to twenty-five minutes on alternate days for ten days, and then stops treatment for ten days, repeating this procedure until the tumor has disappeared. He has had excellent results in the treatment of keloids by this method.

Drs. Boggs, Pancoast and others favored preliminary excision of the tumor, whenever this is possible, following this with Roentgen treatment. The tumors disappear more rapidly and are not so liable to recur.

Present Status of Radiotherapy.

Dr. G. G. Burdick, Chicago, cited cases to show the efficiency of the Roentgen ray in the treatment of skin lesions, many of which are cured entirely, while others are only improved. He has treated eighty cases of epithelioma involving the skin only without a recurrence. In cases of epitheliomas situated at muco-cutaneous junctions he advised removal of the glands in the vicinity after a period of quiescence has been brought about by Roentgen treatment. This method was followed in twenty-three cases with no recurrence of the disease after two years. The knife should be used only in such cases where the tumor is favorably situated for a radical removal. Eighteen cases of carcinoma were cured. In fourteen cases the tumor and enlarged glands disappeared

completely; in four cases they ceased growing. His results in the treatment of sarcoma have been as successful. He believes that every case of primary sarcoma can be much benefited by prolonged mild radiation from an old tube well plated with aluminum.

Treatment of Carcinoma.

DR. GEORGE C. JOHNSTON, Pittsburg, said that in carcinoma of the breast the application of a ray of sufficient intensity for a sufficient length of time is capable of causing a disappearance of the tumor. The course of radiation should not exceed ten treatments of twenty minutes' duration each, with a tube distance of eighteen inches. A tube of fairly low vacuum should be used, carrying a current not to exceed two and a half mp. On about the fifteenth day after operation, postoperative radiation should be begun, raying through the dressings every other day for ten minutes at a time.

DR. GEORGE H. STOVER, Denver uses a ray of mellow quality that will penetrate the tissues, exposing the surrounding tissues for a reasonable distance from the tumor. All vulnerable parts should be protected from the ray. He makes applications three times a week for ten minutes at a time, the tube distance being eight to ten inches. He advises the use of the Roentgen ray in all primary non-operative and recurrent non-operative carcinomas. While there is an equal chance, operation should be done first, followed by Roentgen treatment.

Treatment of Sarcoma.

DR. WILLIAM B. COLEY, New York, said that the value of postoperative treatment of sarcoma has not yet been determined. The facts up to the present time fail to show that the Roentgen ray is curative of malignant growths, except those that are superficial. In some cases the tumor decreases in size, and in a few instances it has disappeared entirely. In all the cases he has treated there has been either local or general recurrence, although in some few cases life has been prolonged. The universal tendency to recurrence and the danger of dissemination of the tumor is sufficient reason, in his opinion, for not advocating the Roentgen ray in the treatment of these tumors, except in inoperable or recurrent cases.

Calculus Diagnosis.

DR. RUSSELL H. BOGGS, Pittsburg, described his method and technic for diagnosing renal and ureteral calculi. The radiograph should be made while the patient holds his breath, using a large amount of current for a short time. In over 200 cases examined there were only two unsatisfactory results.

Drs. Pancoast, Smith and others pointed out that the calcified lymph glands, phleboliths and calcareous deposits in the broad ligaments and pelvic fasciæ may make a shadow simulating a ureteral calculus. Dr. Kassabian advised inflating the urinary bladder with air to assist in making a diagnosis of stone in the lower ureter.

Dr. Pfahler exhibited a new Roentgen ray filter consisting of a piece of sole leather which is moistened so as to resemble normal skin as much as possible. A piece of silver may also be used.

Dr. Strong, Boston, exhibited a unipolar *x*-ray tube to be used for the treatment of the center of tumors and growths on the walls of cavities.

Officers Elected.

The following officers were elected for the ensuing year: President, Henry Hulst, Grand Rapids, Mich.; vice-presidents, Russell H. Boggs, Pittsburg; C. E. Skinner, New Haven, Conn.; E. G. Williams, Richmond, Va.; E. W. Caldwell, New York; secretary, George C. Johnston, Pittsburg; treasurer, L. E. Custer, Dayton, Ohio; members of executive committee, P. M. Hickey, Detroit, and J. F. Smith, Chicago.

Chicago was selected as the next place of meeting.

The following papers were also read: Skeletal Development, P. M. Hickey, Detroit: Treatment of Leukemia, J. F. Smith, Chicago; Roentgen Treatment of Hodgkin's Disease, Leukemia and Polycythemia, H. K. Pancoast, Philadelphia; Treatment of Lupus and Rodent Ulcers, G. P. Girdwood, Montreal; Treatment of Non-malignant and Non-tubercular Skin Lesions, W. S. Newcomet, Philadelphia; Roentgen Ray in Military Surgery, C. F. Stokes U. S. N.; Pathologic and Physiologic Effects of the Roentgen Rays, J. Rudis-Jicinsky, Cedar Rapids, Iowa.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Cardiac Affections.

Lambert, in the *New York State Journal of Medicine*, states that we must regulate the patient's exertions and the patient's environment rather than nag the heart with drugs. If the compensation is broken, then rest in bed should be ordered; if dilatation has taken place, some drug of the digitalis group must be used to lengthen the diastolic pause by diminishing the number of systoles, and thus increasing the time for cardiac nourishment. Small doses of the powdered leaves of digitalis with the extract of gentian are the least liable to disturb the stomach. A grain of digitalis leaves in twelve hours is often sufficient and is better than larger doses. One can divide this grain in varying amounts at varying intervals in the twelve hours. Strychnin sulphate or tincture of nux vomica is often of great value. When there are atheromatous changes in the blood vessels small doses of potassium iodid are of benefit. In order to avoid upsetting the digestion the author recommends giving the drug in a mixture containing aromatics and some artificial digestive substances. A dose of 5 gr. (.3) three times a day is usually sufficient. It is necessary to maintain a good digestion and thus aid in preventing arterial changes.

In the cardionephritic cases the author states that if the heart has reasonable compensation it should be left alone and the kidneys treated; if the heart is out of compensation it should be treated and the kidneys left alone for the time being, if they are doing a reasonable amount of work. The excessively high arterial pressure is often relieved by the administration of glonoin or sodium nitrite. The reduction of the arterial pressure will often relieve both the cardiac strain and the nephritic incompetence.

Brunton, in the *London Practitioner*, discusses breathlessness, especially in relation to cardiac disease. He states that digitalis is first in importance in its action on the heart and that there is no better way of giving it than the old-fashioned pill.

℞ Pulv. digitalis
Pulv. scillæ
Mass hydrarg., āā.....gr. i | 06

M. Ft. pil. No. i.

This is the most common formula, but occasionally an additional grain of blue pill is added to it, and sometimes the extract of hyocyamus 2 grains (.12) in each pill. Why the blue pill should help the action of the digitalis one can not tell, but there can be no doubt whatever that it does so. Of the other preparations, the infusion and the tincture are the most commonly used. The preparations vary in strength and must be given with caution in order to learn the action. In patients in whom digitalis does not succeed strophanthus proves efficient and vice versa. Those cases can only be determined by trial. One of the most valuable remedies for strengthening the heart is strychnin. Its action appears to be that of stimulating the cardiac ganglia, and in cases in which one is doubtful about giving digitalis or strophanthus, either because of their power of slowing the heart or of unduly raising the tension, recourse may be had to strychnin. At the same time this drug proves a most useful adjuvant both to digitalis and strophanthus, and may be given either by mouth or subcutaneously. When the heart is failing digitalin and strychnin may be employed subcutaneously together, and 1/2 or even 1 mg. (gr. 1/60) of the former with 1/30 or even 1/20 of a grain of the latter. Citrate of caffein in doses of from 2 to 5 gr. or diuretin in doses of from 2 to 10 gr. every six hours, are sometimes useful adjuncts to digitalis or strophanthus. Sometimes these drugs cause irritation of the stomach or bowels, and give rise to vomiting or diarrhea, which may require their discontinuance, and as a rule the author thinks

they do more good if used only for a week or even less, and an interval of some days allowed before they are given again.

One of the most important means of relieving dyspnea is certainly free purgation, and one of the best means of securing it is by the use of compound jalap powder in doses of from 20 to 60 gr. (1.3 to 2). This combined with digitalis and blue pill, already mentioned, increases the elimination of water both by the bowel and by the kidney, and lessens the congestion of the liver, which is the natural consequence of venous stagnation. It also relieves the tendency to an edematous condition of the lung and eases respiration.

Furunculosis.

Guthrie, in the *Pennsylvania Medical Journal*, recommends the following treatment for this condition. He divides the treatment into preventive, abortive and curative:

PREVENTIVE.

Measures should be adopted to restore normal vitality, e. g., rest, recreation, fresh air and good food. Proper care should be given to the skin by bathing, and attention to slight injuries, so as to prevent ingress of pyogenic cocci. Sulphid of calcium has been advised as a measure to prevent boils, but the author has not obtained any good results from its use. He recommends the use of quinin in 3 gr. doses (.20) three times a day, given for a week, and claims excellent results.

ABORTIVE.

The author discusses the use of a saturated solution of permanganate of potassium applied to the furuncle and the insinuation into the hair follicle of a minute drop of clear carbolic acid, also the application of carbolic acid after an incision, and his conclusion is that the abortive treatment does more harm than good. All the methods employed involve the breaking down of the wall of protection against the infection. Care should be taken in the early treatment not to drive the infective agents deeper into the tissues nor to overdistend the pus cavity so that the septic process is made to spread.

CURATIVE.

He condemns the old-fashioned flaxseed and bread and milk poultices, believing they do more harm by softening and preparing the soil for the reception of infection. The so-called antiseptic poultice, such as gauze saturated with boric acid solution, or with Thiersch's solution, he considers an admirable dressing. As soon as the crater-like opening at the summit of the cone will admit a probe or small grooved director, and there is evidence of pus beneath, a small straight bistoury may be inserted and the opening enlarged so as to permit a free escape of any retained pus. This will give great relief to the patient. Day by day the softened slough or core may be gently pressed out by using cotton sponges saturated with boric acid solution or a weak bichlorid of mercury solution, and when the cavity is cleansed healing will take place very promptly. No free incision, no curetting or injections into the cavity will render any more satisfactory service, but will aggravate and prolong rather than shorten and relieve the trouble.

Camphorated Phenol.

Longenecker, in the *Pennsylvania Medical Journal*, discusses the use of this product in infected wounds.

Bufalini recommends the combination of carbolic acid with camphor under the name of camphorated phenol, asserting that the camphor moderates the caustic and disorganizing character of the phenol without destroying its useful effects. This mixture is composed of camphor 2 parts and carbolic acid 1 part. On being rubbed together, or simply left to stand and shaken occasionally a clear solution is formed. The formula in the U. S. Dispensatory directs that this solution be washed in water, but for what reason is not stated. The author thinks this washing can be omitted, as at the present day both camphor and phenol may be obtained in sufficient purity for our use without further purification.

The solution has a specific gravity of 1006, is non-corrosive and non-toxic to wounds, and can be applied in many conditions. The results following its use are most excellent in all cases. No untoward symptom has ever, in the author's experience, resulted from its application. Gangrene of the finger has frequently been reported as following the use of weak solution of carbolic acid and water, but this has never occurred even with this full strength solution, which contains 33 per cent. carbolic acid.

The application of camphorated phenol is almost without limit. It can be applied alike to sound skin, wounds and mucous surfaces, such as mouth, nose, vagina, or to abscess cavities, in its full strength and painlessly. Its only limitations seem to be the eye, ear and urethra; to these parts he finds the burning produced by it is rather unpleasant but of short duration, and it may be advisable to use less than full strength, although he has frequently applied it over a limited area even to these parts by the use of cotton on an applicator, in its full strength, without inconvenience to the patient. Camphorated phenol is soluble in alcohol and ether, but insoluble in water. It is miscible with oils and with some other substances, such as tincture of iodin and ichthyol, which serve to modify its action and widen its field of usefulness. Ease of preparation and cheapness are also greatly in its favor.

Flatulence.

Le Progrès Medical recommends the following formula:

℞. Sodii bicarbonatis
Magnesii carbonatis, āā.....3i 4
Pulv. rhei
Olei fœniculi
Olei cari
Olei menth. pip., āā.....3ss 2

M. Ft. pil. No. xx. Sig.: Two pills to be taken after each meal.

Medicolegal

Records of Free Hospital Patients.—Chapter 330 of the Acts of Massachusetts of 1905 provides that hospitals, supported in whole or in part by contributions from the commonwealth or from any municipality, incorporated hospitals offering treatment to patients free of charge, and incorporated hospitals conducted as public charities, shall keep records of the cases under their care and the history of the same in books kept for that purpose. Such records shall be in the custody of the person in charge of the hospital, and shall be admissible as evidence in the courts of the commonwealth as to all matters therein contained. But Section 17 of Chapter 35 of the revised laws declaring public records to be open for inspection shall not apply to such records, and they shall not be open to public inspection until they are produced in court by the person having the custody of the same.

Hospital for Prisoners Having Tubercular Disease.—Chapter 355 of the Acts of Massachusetts of 1905 provides that, with the approval of the governor and council, the board of prison commissioners shall have authority to erect, on the land now occupied by the temporary industrial camp for prisoners at Rutland, suitable buildings to be used as a hospital prison for the confinement and treatment of prisoners having tubercular disease. When such buildings are ready for occupancy the prison commissioners may remove thereto any male prisoner in the state prison, the Massachusetts reformatory, the state farm, or in any jail or house of correction, who appears by the certificate of the prison physician to be suffering from consumption or any disease of a tubercular nature. They may at any time return to the original place of imprisonment any prisoner so removed. A prisoner shall be held in the place to which he is so removed or returned according to the terms of his original sentence. A prisoner removed to said hospital prison shall be held in the custody of the superintendent of said temporary industrial camp for prisoners, and shall be governed, employed and treated according to such rules and regulations as may be established by the board of prison commissioners with the approval of the governor and council. Prisoners held in said hospital prison shall be subject to all the laws that are now applicable to the temporary industrial camp for prisoners.

Lighting, Heating and Ventilating School Buildings.—No. 193 of the Laws of Pennsylvania of 1905 provides that, whereas it is of great importance to the people of that commonwealth

that public-school buildings hereafter erected shall be properly heated, lighted and ventilated, no schoolhouse shall be erected to cost more than $4,000 until the plans and specifications for the same shall show in detail the proper heating, lighting and ventilating of the building. Light shall be admitted from the left or from the left and rear of class-rooms, and the total light area must, unless strengthened by the use of reflecting lenses, equal at least 25 per cent. of floor space. School-houses shall have in each class-room at least fifteen feet of floor space, and not less than two hundred cubic feet of air space per pupil, and shall provide for an approved system of indirect heating and ventilation, by means of which each class-room shall be supplied with fresh air at the rate of not less than thirty cubic feet per minute for each pupil, and warmed to maintain an average temperature of 70 degrees Fahrenheit during the coldest weather.

Some Provisions for State Department of Health.—No. 218 of the Laws of Pennsylvania of 1905, entitled "An act creating a department of health, and defining its powers and duties," provides that such department shall consist of a commissioner of health and an advisory board of six members, to be appointed by the governor, with the advice and consent of the senate. The commissioner of health, who shall be the head of ...e department, shall be a physician of at least ten years' professional experience, and a graduate of a legally constituted medical college. The term of office of the commissioner first appointed shall expire March 1, 1907, and the term thereafter shall be four years. The commissioner is to receive an annual salary of $10,000, and expenses actually and necessarily incurred in the performance of his official duties. Of the advisory board a majority shall be physicians, graduates of legally constituted medical colleges and of at least ten years' experience in the practice of their profession, and one shall be a civil engineer. They are to receive no salary, only actual traveling and other expenses while engaged on the actual duties of the board. On the appointment and qualification of the commissioner, the terms of the members of the state board of health and the secretary of such board shall expire, and no appointments shall thereafter be made to those offices. It shall be the duty of the advisory board to advise the commissioner on such matters as he may bring before it, and to draw up such reasonable orders and regulations as are deemed by such board necessary for the prevention of disease and for the protection of the lives and health of the people of the state, and for the proper performance of other work of the department of health. The commissioner may employ such clerical and other assistants as are necessary and distribute appropriate powers and duties to employes of the department. He may also, from time to time, employ competent persons to render sanitary service and make or supervise practical and scientific investigations and examinations requiring expert skill, and prepare plans and reports relative thereto. It shall be the duty of the commissioner to protect the health of the people of the state, and to determine and employ the most efficient and practical means for the prevention and suppression of disease. He shall cause examination to be made of nuisances or questions affecting the security of life and health in any locality, and shall have power to order nuisances detrimental to the public health, or the causes of disease and mortality, to be abated and removed, and to enforce quarantine regulations. It shall be the duty of the commissioner to have the general supervision of the state registration of births, marriages, deaths and diseases; of practitioners of medicine and surgery; of midwives, nurses and undertakers, and of all persons whose occupation is deemed to be of importance in obtaining complete registration of births, deaths, marriages and disease. In order to insure the official registration of vital statistics and the management of the sanitary affairs of the different parts of the state, he may apportion the latter into ten districts and appoint a health officer in each who shall be a physician of at least five years' professional experience, a graduate of a legally constituted medical college, and who shall receive an annual salary of $2,500 and necessary expenses. The commsisioner may revoke or modify any order, regulation, by-law or ordinance of a local board of health, concerning a matter which, in his judgment, affects the public health beyond the territory over which the local board has jurisdiction. He is also to have all the powers conferred, and perform all the duties heretofore imposed by law on the state board of health, or any member, committee or officer thereof, including the secretary.

Additional Alcoholic Compounds to be Taxed.—Referring to Internal Revenue Circular No. 673, reported on page 1025 of THE JOURNAL of Sept. 30, 1905, James C. Wheeler, Acting Commissioner of Internal Revenue, rules, under date of October 9, that, although the ruling in Circular No. 673 has special reference to compounds composed of distilled spirits and drugs or other medicinal substances, yet in spirit and meaning it may also be extended to include other alcoholic liquors; and as fermented malt liquor, of which every malt extract is largely composed, is an alcoholic liquor, it is for the manufacturers of every such malt extract to show that it comes within that clause of Circular No. 673 in which it is stated that "where substances *undoubtedly medicinal* in their character are combined with . . . alcoholic liquor and are used in sufficient quantity to give a medicinal quality to the liquor other than that which it may inherently possess, such compound is, of course, not to be included in this ruling." In answer to an inquiry by a druggist, Mr. Wheeler further rules that the ruling of Circular No. 673 does not apply to toilet articles, whatever the quantity of alcohol contained therein may be; nor does it apply to the various essences or extracts sold as essences of lemon, vanilla, cinnamon, etc., if these preparations are such as are known to the legitimate grocery or drug trade as household articles for culinary and other uses, and not as beverages. Where, however, alcoholic compounds called "essences of lemon, vanilla, cinnamon," etc., or so-called tinctures or essences of ginger contain "a mere trifle of medicament, the main constituent being alcohol," and these preparations, "usually sold by country merchants, especially in prohibition districts," are found by the local internal revenue officers or agents to be generally sold or used as beverages, every merchant thus selling them without holding the requisite special-tax stamp as a liquor dealer under the internal revenue laws will be liable to criminal prosecution in addition to the assessment against him of special tax and penalty; and the manufacturers of these so-called essences and extracts, who are shown by the facts elicited to have made these alcoholic compounds for sale in prohibition districts, will be held liable to special tax and penalty as rectifiers and liquor dealers.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia, Pa.

October 14.

1 *Patent Urachus. G. T. Vaughan, Washington, D. C.
2 *Quarantine, the Delirium Ferox of American Sanitation. J. S. Fulton, Baltimore, Md.
3 *Normal Short Sleep, Sleeping-Sickness, and Sleep in Animals. J. S. Christison, Chicago.
4 Professional Responsibility in the Care and Diagnosis of Insanity. A. C. Brush, Brooklyn, N. Y.
5 *Seven Cases of Bilharzia Hematobium. C. A.. Smith, Atlanta, Ga.
6 *Hemorrhagic Typhoid with Typhoid Parotitis, Recovery. B. D. Black, Las Vegas, N. M.

1.—See abstract in THE JOURNAL, July 29, 1905, page 347.

2. **Quarantine, the Delirium Ferox of American Sanitation.**—Fulton discusses the "quarantine madness" prevalent in the Gulf states during the yellow-fever epidemic. He believes that rational, uniform and effective inland quarantine, such as can only be obtained through the medium of the federal government, would reduce to insignificant proportions or perhaps abolish forever the detention camp, military cordon and other costly features of inland quarantine and would concentrate the more intense activities on and immediately around the infected areas.

3. **Insomnia and Its Treatment.**—Christison enters into a full discussion of the short periods of sleep among men of eminence; the phenomena of exhausted soldiers marching while sound asleep; the control of sleep by the will; age in

relation to length and depth of sleep; quantity of food and the seasons of the year in relation to sleep; some long sleepers; sleeping sickness; suspended animation in man and animals; effects of forced privation of sleep; habits of sleep in animals—day and night sleepers.

5. **Bilharzia Hematobium.**—Smith reports seven cases found among the Boers and the South African negroes who were with the Boer War Spectacle at St. Louis during the World's Fair. The seven cases were apparently chronic, as macroscopic inspection did not indicate the presence of any blood or blood clots in the urine.

6. **Hemorrhagic Typhoid with Typhoid Parotitis.**—Black reports a case ending in recovery. The patient gave a history of an arrested pulmonary tuberculosis. There was no hemophilia or syphilis. The patient was a total abstainer. Hemorrhages occurred about the seventeenth day of illness. Intestinal oozing was followed by oozing from mouth, throat and nose, hematemesis, hemorrhage from bladder and urinary tract. The purpura involved the right leg, and there were pressure points on the posterior surface of body. There were multiple hemorrhages for eleven days. A complicating parotitis seemed to have a marked effect on the hemorrhagic tendency. Medication was unsatisfactory. As a last resort, when other stimulants failed, camphorated oil was given hypodermically in doses of from 15 to 30 drops, as was necessary. Its action was satisfactory.

Medical Record, New York.

October 14.

7 *Office Treatment of Diseases of the Rectum, with a Description of Some New Methods. C. B. Kelsey, New York.
8 *Vapor Method of Anesthesia. J. T. Gwathmey, New York.
9 Etiology and Elimination of Diabetes. G. L. Curtis, New York.
10 *Cost of Modern Hospitals. S. S. Goldwater, New York.

7. **Office Treatment of Diseases of Rectum.**—For securing local anesthesia, Kelsey prefers eucain to cocain, and he also believes that this agent is much to be preferred to the injection of water for the same object on account of the large amount of fluid required in the latter case. Local anesthesia is open to the serious objection, however, that by it the sphincters can not be stretched without pain, on which account a very large proportion of rectal surgery is left dependent on general anesthesia. In speaking of fissure, Kelsey says that, while not the method of choice, still almost as many cures can be effected by incising the sphincter under local anesthesia as by stretching it under gas or ether. The application of the actual cautery for pruritus is, if anything, more satisfactory if done in several sessions under local anesthesia than if but one treatment is given under general anesthesia. Fistula can sometimes be treated satisfactorily in the office, but much judgment is necessary in selecting the cases. Kelsey also describes a new office treatment for hemorrhoids, which he has practiced for some time with good results. It consists in punctate cauterization of the tumors with a needle heated by electricity, the parts being first rendered insensitive by injecting a few drops of weak eucain solution. Only one or two applications are made at a time, and the treatment should not be repeated oftener than twice a week at first. The patient is not expected to be confined to the house or kept from his ordinary business. The time consumed by the treatment in an ordinary case is usually about three months, though it can be done in much less. Kelsey has not observed any complications during ten years' use of the method, and he considers it a valuable procedure in cases in which, on account of the patient's timidity or for other reasons, the clamp and cautery or ligature are not used.

8. **Vapor Method of Anesthesia.**—Gwathmey describes a modification of the Braun and Harcourt inhalers. The apparatus is intended to be used with ether and chloroform administered with or without the admixture of oxygen, but ethyl chlorid or nitrous oxid may also be used in inducing anesthesia. Anesthesia with his inhaler is said to be better than that induced by the drop method, as the concentration of the anesthetic mixture is accurately controllable instead of being dependent on the patient's manner of breathing, and while the gas-ether sequence is the quickest and safest routine method of anesthetizing, it is unphysiologic and will probably be superseded by the vapor method, or some other, in the near future. The advantages claimed for the method, in addition to the exact control of the anesthetic vapor and the ability to change from ether to chloroform instantly at will, are the ease and pleasantness of induction, and the fact that excitement is usually absent or is very slight, the breathing is regular and natural, the lid reflex is never entirely absent, the breathing and pulse are usually normal, the amount of anesthetic used is very small, after-effects are absent in most cases, the technic can be acquired more rapidly than with other methods, and a continual narcosis may be kept up without danger to the patient. The apparatus is illustrated and details of its application under varying conditions, particularly in surgery about the mouth, are given.

10. **Cost of Modern Hospitals.**—Goldwater analyses at length the conditions which cause the cost of the modern hospital building to be so much in excess of what was the case a generation ago. He estimates that a hospital of 1870, of 450 beds with a space allowance of 6,000 cubic feet per patient, could be built to-day at a cost of $1,200 a bed. A modern hospital with the same space allowance would cost double, or $2,400 a bed, while in a hospital recently built 11,000 cubic feet were allowed for each patient, and the cost was approximately $4,400 a bed. The author then analyses at length the various features entering into the construction of the modern hospital which contribute to raise its cost to so great a degree, such as fireproof construction, electric light and power, laundry, kitchen, refrigeration, surgical facilities, disinfecting and sterilizing plants, accommodations for the staff, nurses and employes, laboratories, etc. He summarizes by saying that, aside from economic causes which are beyond our reach, the high prevailing cost of construction is apparently due to new methods of disease classification and treatment, to better nursing, to the discovery of scientific methods of diagnosis, to an application of the principles of hygiene to wards, workrooms and living rooms, to the desire to release from the wards during part of the day convalescents to whom the atmosphere of the sick room is detrimental, and, finally, to the evolution of the fireproof, and to a certain degree germ-proof, building. If we apply to all these improvements the rigid tests of result, we shall find that the test is fairly met; but while we may grant that to build a general hospital embodying all the features enumerated is to tread the path of wisdom, we may nevertheless question the propriety of investing so much capital in the construction of such a plant. The author then proposes the plan of having the hospital maintain in the country a less expensive branch building for the reception of the convalescent patients, and shows that in this way a much larger number of patients can be provided for at the same expense. For example, the sum of $1,000,000 will provide a city hospital for 250 patients, but invested in a city hospital with country annex it will furnish accommodations for 300 patients. The conditions of operating will also be such as to render this the most economical system of managing the hospital, and he urges universal adoption of the plan.

Medical News, New York.

October 14.

11 Teaching of Failures. F. L. Hupp, Wheeling, W. Va.
12 Symptomatic Treatment of Tuberculosis. J. R. L. Daly, New York.
13 *Four Cases of Cerebrospinal Meningitis Probably Due to the Pneumococcus. R. N. Willson, Philadelphia.
14 *The Gynecologic Bladder. A. E. Gallant, New York.
15 Ideal Dental Narcosis. M. Green, New York.

13. **Cerebrospinal Meningitis Due to Pneumococcus.**—These cases are reported by Willson for two reasons: First, because they demonstrate that the popular teaching to the effect that pneumococcus meningitis is, *a priori*, a fatal condition, is not altogether warranted by clinical evidence; and, second, because from the similarity of the clinical pictures they offer an opportunity of discriminating between this and other forms of cerebrospinal inflammation. A diplococcus representing the pneumococcus was obtained on examination of the cerebrospinal fluid of three of the cases. Two patients also had some pneumonic involvement. In one case no bacteria could be found. In three of the four cases the onset was sudden. In the fourth case the prodromal symptoms extended over the greater portion of a month, consisting mainly of occipital

headache and eventually the symptom-complex of optic neuritis. Cephalalgia was present and intense in every case from the start until delirium or coma set in. Delirium was present early in all the cases, except one in which it appeared after a long prodromal period, and in all it disappeared after drainage of the cerebrospinal canal. The patellar and plantar reflexes were absent in all cases on both sides very early and throughout the course of the disease. The ocular reflexes were almost normal in every case and at all times. Kernig's contracture was present in the hamstring muscles in all the cases. The tendon reflexes of the upper extremity appeared intermittently and irregularly and then were abnormal. The treatment in all the cases was identical and consisted in the prompt withdrawal of all the obtainable cerebrospinal fluid, with the object of relieving intracerebrospinal hypertension. Willson is convinced that this procedure may render mild an otherwise grave condition.

14. **Gynecologic Bladder.**—Of 500 cases seen by Gallant, 213 gave a history of some abnormality or symptom referable to the bladder. Six of these cases occurred in children between 5 and 15 years of age. Gallant is convinced that frequent and painful micturition is met with in about one-third of the females who apply for gynecologic advice. In 25 per cent. this is due to specific gonorrheal urethritis, often associated with vaginitis, etc., although but few cases of gonorrheic infection are met with after the age of 32. Vesical prolapse and intrapelvic or abdominal tumors are the most common factors after 30. Uterine displacement, inflammation involving the broad, the uterosacral ligaments, the tubes and ovaries must be reckoned with and relieved by appropriate measures before the bladder symptoms can be cured. As changes in the urine-producing symptoms do not occur in more than 5 per cent. of all cases, after medical treatment has been tried for a time and found wanting, the pelvis should be explored digitally and the anal region inspected, not infrequently the rectum and sigmoid as well. Whenever urinalysis points to calculi or infection in the bladder, ureter or kidney it is Gallant's custom to pass the cystoscope and to catheterize the ureter.

Boston Medical and Surgical Journal.

October 12.

16 *Diagnosis of Cancer and Ulcer of the Stomach by the Use of Expert Methods of Clinical Procedure. H. F. Hewes, Boston.
17 *Brief Consideration of the Surgical Treatment of Diseases of the Stomach. J. T. Bottomley, Boston.
18 Resection of the Nasal Septum. L. E. White, Boston.

16. **Diagnosis of Cancer and Ulcer of Stomach.**—Hewes details the result of an experimental study of the subject by modern clinical methods of observation with special reference to the indications obtained by the use of those particular methods specially adapted to the study of the stomach, that is, the study in which the value of the indications offered by the clinical findings obtained is proven or tested by the pathologic findings found at the operation or postmortem. In 21 cases of stasis which came to operation or postmortem the cause of the condition was found to be ulcer at the pylorus in 10 cases, cancer at the pylorus in 10 cases, and adhesions about the pylorus in 1 case. Hewes believes that he is justified in saying that the finding of stasis in any case of stomach disorder is in itself a very suggestive point in connection with the possibility of the existence of ulcer or cancer at the pylorus. When this sign is taken in connection with other findings, as the size and location of the stomach, the presence of blood, an anemic condition of the patient, etc., it frequently confirms the diagnosis of cancer or ulcer. Hewes examined the contents of the fasting stomach at least twelve hours after the ingestion of food or material of any kind. The findings in the fasting contents which are indicative of stasis are (1) the presence of an abnormal food residue and (2) the presence of abnormal fermentation in the stomach. Of 160 cases examined for blood, it was found present in none of the chronic cases, except those which were later proved to be cancer or ulcer of the stomach. In 18 cases of stenosis from all causes blood was found in 9.

17. **Surgery of Stomach Diseases.**—Bottomley says that a surgeon should be asked to see a gastric case (1) just as soon as there is even a suspicion of cancer; (2) in a case of supposed acute gastric ulcer just as soon as a reasonably long course of medical treatment has failed to give a very definite improvement, after from five to eight weeks; (3) just as soon as there is doubt in the diagnosis of any gastric case; (4) in all chronic ulcers; (5) in all complications and sequelæ of both acute and chronic gastric ulcers.

New York Medical Journal.

October 14.

19 An Address Introductory to the Course of Study Delivered Before the Medical School of McGill University, Montreal, September 19, 1905. A. Jacobi, New York.
20 Reflex Irritations from Lesions in the Male Urethra. L. B. Bangs, New York.
21 Surgery of the Gall-Bladder and Ducts. J. M. Baldy, Philadelphia.
22 *Three Cases of Extraperitoneal Rupture of the Bladder Complicating Fracture of the Pelvis with Recovery. J. R. Eastman, Indianapolis.
23 Relation of Certain Extreme Emotional States to Insanity. T. H. Kellogg, Riverdale-on-Hudson, N. Y.
24 High Frequency Current in Non-toxic Amblyopia. D. H. Coover, Denver.
25 Case of Polycythemia and Cyanosis. A. J. Zimlick, Philadelphia.

22. **Extraperitoneal Rupture of Bladder.**—Eastman reports three cases of extraperitoneal rupture of the urinary bladder complicating fracture of the pelvis, in which the treatment consisted in combatting shock (chiefly with normal salt solution and adrenalin), in the removal of the clot, suture of the rent in the bladder, appropriate bladder drainage, rest, and the application of a bandage in such a manner as to prevent movement of the pieces of bone which were broken off. In the first case cited a large spicula of bone from the right horizontal ramus of the pubis was found thrust through the anterior bladder wall below the peritoneal fold. The second case was one in which the rectum and urinary bladder were transfixed by impalement on some sharp object in a railway wreck. In the third case the anterior wall of the bladder and roof of the prostatic urethra were torn for a distance of two and one-half inches as the result of a crushing injury in the region of the pelvis inflicted by being caught under a falling mass of frozen gravel while at work in a gravel pit.

Lancet-Clinic, Cincinnati, Ohio.

October 14.

26 Diagnosis and Treatment of Incipient Skin Cancer. F. B. Wynn, Indianapolis, Ind.
27 Therapeutic Value of Heat and Cold Applied to the Spinal Cord. W. F. Glenn, Nashville, Tenn.
28 Nasopharyngeal Adenoids. J. A. Stucky, Lexington, Ky.

St. Louis Medical Review.

October 14.

29 Curiosities of Ancient Japanese Medicine. J. Knott, Dublin, Ireland.
30 College Course on Tuberculosis. W. Porter, St. Louis.

American Journal of Obstetrics, New York.

October.

31 Malignancy in Uterine Myomata. H. P. Lewis, Chicago.
32 *New Method of Perineorrhaphy. G. R. Holden, Baltimore.
33 Diagnosis and Treatment of Pneumonia in Children. G. N. Acker, Washington, D. C.
34 Mauquest De La Motte and His Treatise on Obstetrics. C. G. Cumston, Boston, Mass.
35 Relation of Conception and Birth to Season and Hour. C. S. White, Washington, D. C.
36 Leucocytosis in Gynecology. H. C. Taylor, New York.
37 Closing of Vesicovaginal Fistulæ. J. C. Reeve, Jr., Dayton, Ohio.
38 Anatomy of a Case of Tubal Pregnancy. D. W. Prentiss, Washington, D. C.
39 Fundal, Incipient and Cervical Unavoidable Hemorrhage: New Descriptive Terms for the Two Types of Antepartum Hemorrhage from Placental Separation. J. L. Andrews.
40. Chronic Interstitial Mastitis. W. P. Carr, Washington, D. C.
41 *Mortality in Operations on Fibroid Tumors of the Uterus. J. M. Baldy, Philadelphia.

32. **New Perineorrhaphy.**—Holden denudes a triangular shaped area on the vaginal surface, the apex of the triangle being from 4 to 6 centimeters from the outlet in the median line. From this point the denudation runs out to the lower part of the remains of the hymen, the upper and outer lateral limit being about the same as in the Emmet operation. The external denudation is brought down to a point which is usually just above the position of the sphincter ani. The limits of the denudation are first marked out with the knife, then the vaginal mucosa is removed with the Emmet scissors. The border of the levator ani muscle on one side is now felt by palpation with the finger just behind the ischiopubic ramus. Under the guidance of the palpating finger this broad edge of

muscle is seized with the mouse-tooth dissecting forceps through the overlying fascia and connective tissue and drawn out toward the median line. A round needle bearing a silk suture transfixes the fascia and muscle. The suture is not tied. The ends are clamped, and the suture is used to draw the muscle forward and to make it prominent when later in the operation it is necessary to pass sutures through the muscle. A second suture is next passed through the muscle of the opposite side in a similar manner. The denudation of vaginal mucosa, of course, should extend high enough on the lateral walls of the vagina to allow the muscles to be brought together easily in the median line. Two external sutures of silkworm gut are now introduced, each suture passing through skin and subcutaneous tissue, through the levator ani on the same side, then through the opposite muscle from before backward, and finally out through the skin and subcutaneous tissue on that side. When the needle is passed through the levator ani, an assistant pulls on the silk traction suture which has previously been passed through the muscle, making it stand out, and a deep bite can be taken, passing through the entire muscle. The lowest suture is put near the rectum, the left forefinger of the operator pushing the rectum down so that it is not injured. The second suture is placed about 2 centimeters above the first suture. When these two sutures are drawn tight the borders of the two muscles are closely approximated, as are also the edges of the skin incision. The muscles are also held firmly against the skin and subcutaneous tissue. The silkworm gut sutures are not tied until after the internal stitches are placed and tied. The temporary traction sutures through the muscles may now be removed, if desired, as the muscles are well splinted out and rendered sufficiently prominent by the silkworm-gut sutures. The first internal stitches are of plain catgut and begin at the apex of the triangle. Three or four stitches are usually taken, uniting the cut edges of the mucosa and catching enough of the denuded surface between to prevent leaving any dead space and to stop all bleeding. A figure-of-eight stitch is next placed. Formalin or chromic catgut is used. The stitch starts on the right-hand side and passes through mucosa and underlying tissue to the posterior surface of the muscle. Without touching the muscle of that side it is carried to the opposite side and pierces that muscle from behind forward. It then passes to the anterior surface of the muscle on the first side and passes through that from before backward. Finally, passing to the second side, it is brought out through the mucosa and underlying tissue in the same way as it entered on the first side. Two such stitches are inserted. The first one pierces the muscles between the two silkworm-gut sutures, the second goes through the muscles above the uppermost silkworm-gut stitch. By tying these two figure-of-eight sutures the borders of the levator ani muscles are brought together, the cut edges of the vaginal mucosa are nicely approximated and the mucosa, as a whole, is bound down firmly to the posterior surface of the muscles. By tying the silkworm-gut sutures the anterior part of the muscular perineal wall is covered by skin and subcutaneous tissue, the muscles are still more closely approximated and are firmly bound to their covering of subcutaneous tissue and skin in front. One or two superficial stitches of plain catgut are sometimes necessary to approximate the skin or mucosa at the upper part of the wound. The advantages of the operation are said to be as follows: A thick, firm perineal body is built up, which narrows the outlet. The axis of the outlet is lifted up out of the direction in which the intra-abdominal pressure is transmitted downward in the upper part of the vagina. A vaginal sphincter of the voluntary muscle is incorporated in the perineal body. The muscles are brought together in front of the rectocele. The rectocele is, therefore, pushed back and obliterated, not partially incorporated into the perineal body, as in the Emmet operation. A good cosmetic result is obtained and an even linear scar is left. Holden has used this method in about twenty cases with uniformly good results. The silkworm-gut sutures are removed on the twelfth day.

41. **Mortality in Operations on Fibroids.**—From 1896 to March, 1905, Baldy operated on 248 cases of fibroid tumor of the uterus, with a mortality of 8.4 per cent. In the last 128 patients operated on during the past 39 months, the mortality was 2.3 per cent. The greatest mortality, 9.21 per cent., occurred in 219 cases of supravaginal hysterectomy. Fourteen cases of panhysterectomy had a mortality of 7.14 per cent. Eleven cases of abdominal myomectomy, three cases of vaginal hysterectomy, two cases of vaginal myomectomy and one case of vaginal myomectomy (Downes) gave no mortality.

Bulletin Johns Hopkins Hospital, Baltimore.

October.

42 Early Diagnosis and Radical Cure of Carcinoma of the Prostate. H. H. Young, Baltimore.
43 Action of the Toxic Agent of Lobar Pneumonia; Therapeutics. W. V. Brem, Jr., Baltimore.
44 *Case of Unusually Large Aortic Aneurism. W. H. Hough, Washington, D. C.
45 *Acute Pericarditis Complicating Acute Lobar Pneumonia. J. A. Chatard, Baltimore.
46 Rise of the Present Conceptions as to the Cause of the Heart Beat. E. G. Martin, Baltimore.

44. **Unusually Large Aortic Aneurism.**—The case reported by Hough is interesting not only because of the unusual size of the aneurism, but also because of the presence of a collateral venous circulation. The patient, aged 60, occupation baker, gave a history of having exerted himself considerably at times lifting barrels of flour. He never, however, noticed any bad effects from this. Two years ago he began to complain of pain in the chest, which seemed to be worse at night, interfering considerably with his sleep. Later he developed a slight cough and dyspnea, with some harshness of the voice. A swelling developed gradually near the right border of the sternum, between the second and fourth costal cartilages, which finally reached the size of a small lemon. It was pulsating and expansile. There was no pulsation of the vessels of the neck, and no evidence of venous compression nor of irritation of the sympathetic. About a year later there was noticed an enlargement of the superficial veins of the right half of the body. These veins rapidly became more dilated and tortuous, the flow being from above downward. The veins entering into this collateral circulation were, in the order of their size, the right superficial epigastric, a large branch from the left superficial epigastric joining its mate near the umbilicus, several lateral thoracic veins, the right jugular and a network of superficial veins over the tumor and over the superior and anterior surfaces of the right shoulder. This collateral venous circulation was thought to be due to pressure on the right innominate vein and perhaps also slightly on the superior vena cava. One month later well-marked tracheal tugging set in and an area of softening appeared at the summit of the tumor. At no time was there any weeping or leakage of blood. Death ensued two months later, caused by gradual failing in strength and dyspnea.

45. **Acute Pericarditis Complicating Pneumonia.**—Chatard reports on 665 cases of acute lobar pneumonia admitted at the Johns Hopkins Hospital during a period of sixteen years. These figures include all cases, both those admitted with the disease and those developing terminal pneumonias. Acute pericarditis was present in 31 patients, or 4.66 per cent. In 13, or 41.9 per cent., pericarditis was recognized during life. In the remaining 18 patients it was only recognized at autopsy. Autopsies made in 26 instances confirmed the diagnosis of acute pericarditis or showed its presence when not suspected before death. The average age of the patients was 32.5 years. The complication occurred more frequently in young adults, only 5 patients out of the last 19 in this series being above the average age (32.5 years); the majority were much younger. There were 22 males and 9 females. Of the males 10 were white and 12 colored; among the females 5 were white and 4 were colored. The average duration was 6 days. The mortality was extremely high, 29 patients out of the 31 dying, or about 93.5 per cent. A marked history of alcoholism was given by 10 patients. Occupation had little bearing on the disease, the majority being laborers, as in most hospital series. Two patients gave a history of previous attacks of pneumonia. Another had a pneumococcus infection, the organism being cultivated from the blood during life. Four cases were admitted in active delirium and two patients became delirious during the course of the disease—delirium, therefore, occurring in 19.3 per cent. There were two instances of terminal pneumonia, or 6.45 per cent. The pneu-

mococcus was obtained in culture in 16 instances and found microscopically in cover-slip smears made at autopsy 7 times when the cultures were negative, a total of 23 in 29 autopsies. From the pericardium the pneumococcus was cultivated 12 times and the smears showed its presence in 7 other cases. Consequently, in 19 of the 29 cases of pericarditis the pneumococcus was the organism present. No other important organisms were cultivated, in most instances the cultures of smears being sterile or contaminated. The treatment of patients in whom the pericardial rub was recognized during life was of the general supportive character usually employed in pericarditis. Locally ice bags and blistering were tried. All treatment, except in the cases of two patients who recovered, seemed to be unavailing. In no instances was aspiration or free drainage tried. Chatard concluded that pericarditis, developing during the course of an acute lobar pneumonia, is a most serious and important complication, occurring more especially in young adults, frequently insidious, latent, and often not recognized during life. It appears to arise as frequently by a metastatic process as by direct extension. Treatment is very unsatisfactory and often unavailing, except when fluid is present, in which case it is more surgical than medical. In all patients with pneumonia a most careful watch should be kept on the heart, as this complication appears to be much more frequent than is generally supposed, and urgent treatment in the early stages may materially reduce a high mortality.

Medicine, Detroit, Mich.

October.

47 Echinococcus Multilocularis—A Graduation Thesis. W. H. Smith.
48 Case of Aortic Insufficiency, with Postmortem Examination. E. M. Ladova, Chicago.
49 Aneurism in Tabes. F. H. Brandt, Chicago.
50 Erotic Symbolism. H. Ellis, Cornwall, England.
51 *Bloodless Resection of the Rectum. E. Laplace, Philadelphia.
52 Syphilis Infection and Paretic Dementia. J. G. Kiernan, Chicago.

51. Bloodless Resection of the Rectum.—La Place describes his operation as follows: The patient, under anesthesia, is placed in a recumbent position with the thighs flexed on the abdomen and the pelvis somewhat elevated. The abdomen is brought up to the full extent of the prolapse by means of a volsella forceps and secured in this position by assistants. A curved, large Hagedorn needle, armed with stout twisted silk, is introduced through the double thickness of the rectum on a level with the margin of the anus. The ligature is then cut in half, resulting in two free ligatures, and left in this condition for a moment. About an inch away, on the same level, the needle armed with a similar ligature is introduced through the double thickness of the rectum. A finger introduced within the inner circumference of the rectum will guide the needle; it is brought out and the ligature cut in half as before. One end of the thread from the first ligature is tied to one end of the thread of the second ligature, making a knot within the inner cylinder (caliber) of the rectum. This is then drawn tight to the outside. These two threads are now tied together as tightly on the outside. Thus all the tissues comprised in the double thickness of the rectum between the point of entrance of the first suture and the second suture have been absolutely and completely compressed. There is a free thread left from the second ligature. A third ligature is introduced in the same manner an inch away from the second, and on being cut one of the threads is united within the rectum with the remaining thread from the second ligature, thereby making a continuous thread within the rectum. The two corresponding ends are now tied tightly on the outside, compressing all the tissues of the rectum between suture No. 2 and suture No. 3; and thus sufficient sutures are placed circularly around the rectum on a level with the margin of the anus until the last ligature is introduced. Supposing seven ligatures to have been thus introduced, there is one free thread left from ligature No. 1 and this is tied to the free end of the last inserted suture within the cut. In this way all the tissues of the double thickness of the rectum beyond the margin of the anus have been effectively compressed and ligated. An amputation knife is then used to remove bodily and at once all the rectal tissues below the ligatures. There is almost complete absence of hemorrhage. In order to suture the margin of the anus with the cut extremity of the rectum, each ligature, beginning with No. 1, is removed singly. This gives an area about one inch in length to be dealt with for arrest of hemorrhage and for suturing the cut extremities together. On removing the ligature any hemorrhage which takes place is controlled by forceps and a silk ligature applied. Suturing the parts is accomplished by through-and-through continuous suturing with chromicized catgut. As many sutures are placed as are necessary for solid union of the parts; and when the distance between the first and second ligature has been closed the second ligature is cut away. Having arrested the hemorrhage by the same method, suturing is done as before. This method is carried on until the whole circumference of the gut has been reunited. It is possible thus to resect as much as eight inches of the rectum with very little hemorrhage and with great facility. Further treatment is practically *nil*. The patient is put on a liquid diet, and an enema administered daily keeps the parts clean. The catgut drops away in time and no complications are likely to set in. The procedure is also free from postoperative pain.

International Journal of Surgery, New York.

October.

53 *Stenosis of the Cervix Uteri. A. H. Goelet, New York.
54 Tuberculosis of the Shoulder Joint, with Radical Operation for its Removal. W. L. Allison, San Antonio, Texas.
55 Present Treatment of Fractures of the Forearm. J. E. King, Richmond, Ind.

53. Stenosis of Cervix Uteri.—Goelet considers the two-branch dilator an ideal instrument inasmuch as the required dilatation may be accomplished gradually and without injury if ordinary care is observed and it is not permitted to slip out. The degree of dilatation should be only sufficient to permit the easy accomplishment of the work to follow. Goelet finds very much less necessity for employing the steel dilator in these cases now than formerly, and believes it is only necessary in the very few cases that do not yield to negative electrolysis, employed intelligently to accomplish a certain purpose, and not haphazard. Some method of dilatation, however, is essential when curettage is necessary or when the uterine stem is to be inserted. Forcible dilatation, he says, serves only to expand the caliber of the canal temporarily, and unless the condition that produces the constriction is done away with recontraction is certain to follow sooner or later. The result obtained with negative electrolysis is more certainly permanent if it is employed properly, because it stimulates an altered circulation and nutrition, softens indurated tissue and effects drainage of the cervical gland as well as drainage from the uterine cavity. With it the cervical canal can be rendered more certainly and permanently patulous than by any other means; on the other hand, it is capable of doing an infinite amount of harm if it is used improperly. For removal of granulations at the internal os and in the canal the sharp curette must be used after dilatation with the steel dilator, and a patulous condition of the canal must be maintained thereafter by appropriate treatment until a normal condition has been restored. On removal of the granulations with the curette Goelet makes an application of pure carbolic acid to that location only and does not carry it up into the cavity of the uterus. Subsequently, beginning a week after removing the granulations, applications of negative electrolysis are made to the canal by means of conical electrodes, selecting the size that may be inserted without any force. These applications are made at first every second or third day, and later at gradually increasing intervals until the cervical stricture is softened and the canal remains normally patulous. Care is observed never to use the current long enough each time or strong enough to produce cauterization; therefore, never more than a 10-ma. current is used for more than three minutes. Under these applications the mucous membrane heals without contraction and the canal will remain patulous. The same method of negative electrolysis is applicable when the stenosis is due to diseased and occluded glands, and it may be preceded or not by dilatation with the steel dilator, as may be required. It is also effective in all simple uncomplicated cases of stenosis due to chronic inflammation with thickening of the mucous membrane, or simple congestion with edema, and for the conical elongated cervix and undeveloped uterus. Goelet limits the

application of the intrauterine stem to those cases of stenosis due to or associated with hyperplasia and induration of the cervical structure and for flexions. It is never kept in the uterus, however, for a longer period than a week, and during that time the patient is confined to bed. This stem is made of glass tubing, open at each end to permit free drainage, and it is retained in position by loose packing of gauze in the vagina. It is removed repeatedly during this time, cleansed and replaced. Subsequently the applications of negative electrolysis will be necessary in some cases to supplement the action of the stem in restoring a normal condition of the uterine wall, for that is its purpose. Its presence in the canal stimulates an altered circulation and nutrition, and consequently alters the condition of the cervical structures. Within a few days after it is introduced the whole cervix becomes noticeably softened, and the caliber of the canal is so much enlarged that it is difficult to retain the stem in position, though it was at first grasped firmly by the constriction of the cervix.

University of Pennsylvania Medical Bulletin, Philadelphia.

September.

56 *A Study of Metabolism in Leukemia, Under the Influence of the X-Ray. J. H. Musser and D. L. Edsall, Philadelphia.
57 Fractures of the Radius; an Experimental study and Report of Cases. T. T. Thomas, Philadelphia.
58 *Bacteria Encountered in Suppurations. D. H. Bergey, Philadelphia.
59 Volume of Nitrogen Evolved from Uric Acid by the Action of Alkaline Sodium Hypobromite Solution. J. Marshall and L. A. Ryan, Philadelphia.

56.—See abstract in The Journal, June 3, 1905, page 1801.

58. **Bacteria Encountered in Suppurations.**—Bergey examined thirty pus cases, including 6 that were diagnosed as tuberculous; 4 were abscesses of the inguinal and rectal region; 2 were cases of empyema; 1, carcinoma of the breast; several were superficial ulcers, and the remainder were either suppurating wounds or cases in which suppuration followed various operative procedures. In 24 of the 30 cases staphylococci were encountered either alone or in conjunction with other organisms. Streptococci were found six times. *Bacillus pyocyaneus* was found in 9 cases. In 4 of the cases *Bacillus coli* was encountered. Aside from these organisms, *Bacillus proteus vulgaris* was encountered once, and several bacilli the exact identity of which was not definitely determined. In 13 of the cases an organism having morphologic characters simulating those of *Bacillus diphtheriæ* was encountered. *Bacillus pseudodiphtheriticum* was found in 13 cases, or 43.3 per cent. of the cases examined. In many of the specimens of pus *Bacillus pseudodiphtheriticum* was present in very large numbers, far exceeding in number all the other bacteria. The results of Bergey's investigations indicate that, aside from the usually recognized pyogenic organisms—namely, the staphylococci, streptococci and *Pseudomonas æruginosa*—a very large proportion of suppurations contain, in addition to one or more of these organisms, *Bacillus pseudodiphtheriticum*. The experiments and observations made thus far with *Bacillus pseudodiphtheriticum* indicate that it has distinct, though rather mild, pyogenic properties. The results of the investigation indicate that it is capable of producing a soluble toxin, but, on the other hand, like the staphylococci and streptococci, it produces an endotoxin.

Southern Medicine and Surgery, Chattanooga, Tenn.

September.

60 *Lessons To Be Learned from the Present Epidemic of Yellow Fever. G. A. Baxter, Chattanooga.
61 Mosquitoes and Disease. C. L. Pribble, Topeka, Kan.
62 The Menopause. W. L. Peple, Richmond, Va.
63 Crime, a Disease with Some Suggestions for Its Cure. H. L. Appleton, Gadsden, Ala.
64 Typhoid Fever Limited. A. G. Brown, Jr., Richmond, Va.

60. **Lessons to be Learned from the Yellow Fever Epidemic.**—Baxter states that he is convinced that, as a result of the present epidemic of yellow fever, uniformity of quarantine regulations will result, but not till all matters relating to public health and quarantine are relegated by the states to the general government, which alone can act with fairness and justice to all. To attain this he urges physicians to advocate such a course in all communities in the South. He states that this is the most important question which confronts the South to-day in view of the closer communication which will be had with South American ports in the near future. Another lesson which has been taught by the present epidemic is the necessity of municipal cleanliness in regard to malaria as well as yellow fever.

Archives of Pediatrics, New York.

September.

65 *Results of Decapsulation of the Kidneys for Nephritis in Children. E. E. Graham, Philadelphia.

65. **Decapsulation of Kidneys for Nephritis in Children.**—The histories of ten recorded cases are reviewed by Graham and one personal case is added. Graham found that a careful study of the patients operated on shows that if the nephritis is of comparatively recent origin, the urinary evidences of the nephritis being perhaps only of some months' duration, and if under the best medical care the patient is not improving, but is growing progressively worse, and there is more or less renal insufficiency, a rapid improvement may follow a decapsulation. In Graham's series of 11 cases there were 5 deaths, or 45.4 per cent. Of these five deaths, one patient lived in a much improved condition for a year and died from an attack of acute nephritis. One was distinctly improved by operation. There were four probable, or at least possible, complete cures, or 36.3 per cent. Two patients were not improved. Graham believes that all the patients would probably have died if not operated on. The forms of nephritis most benefited by operation are the acute and subacute cases, but only those patients should be operated on who are not doing well under appropriate medical treatment. The results in the chronic cases are not favorable. Regeneration of the kidney tissue in the child is more likely to occur, and the kidney lesions in the child are less likely to be complicated by degenerations in other portions of the body, and, hence, improvement possible in the first few months following decapsulation is more apt to be permanent in the child. The eye-ground changes are less significant in the child than in the adult.

California State Journal of Medicine, San Francisco.

September.

66 *Unity, Peace and Concord. W. Osler, Oxford, England.
67 Clinical Features of Gall Bladder and Gall Duct Affections. H. C. Moffitt, San Francisco.
68 Preliminary Education. L. Cothran, San José.
69 Report of the Work of the Board of Examiners. D. Tait, San Francisco.
70 Uses and Abuses of the X-Ray. A. H. Grosse, San Francisco.
71 Indications for Roentgen Therapy. W. Lehmann, San Francisco.
72 Syphilitic Keratodermia, Case Simulating Erythema Keratodes or "Brooke's Disease." A. Garceau, San Francisco.
72½ Poisoning from Ceanothus Velutinus Resembling Rhus Poisoning. R. F. Rooney, Auburn.

66. See abstract in The Journal, Aug. 5, 1905, page 365.

Columbus Medical Journal.

September.

73 General Consideration of Hernia. S. Leach, Columbus.
74 Abortion, Its Etiology, Symptomatology and Treatment. C. M. Wanzer, Urbana, Ohio.
75 Intestinal Indigestion. W. H. Benner, Tiffin, Ohio.

Albany Medical Annals.

September.

76 Anomalies of the Intelligence in Delirium. H. Elliott, Troy, N. Y.
77 Perforating Thoracic Aneurism Pointing Externally Through the Sternum with Non-Fatal Rupture. H. C. Gordinier, Troy, N. Y.
78 *End Results in Surgery of the Kidney, Based on a Study of 90 Cases, with 123 Operations. A. Vander Veer, Albany, N. Y.

78. Id.—July 29, 1905, page 346.

Kentucky Medical Journal, Louisville.

September.

79 Puerperal Convulsions. T. H. Garvin, Horse Cave, Ky.
80 Climate and Relapses in Pulmonary Tuberculosis. A. Dixon, Jr., El Paso, Tex.
81 Random Thoughts on Medicine. C. W. Aitkin, Lexington.
82 Colles' Fracture. W. E. Savage, Cincinnati.
83 Historical Sketch of the Early History of Medicine in Kentucky; President's Address, Kentucky Valley Medical Association, Torrent, Ky., June 22, 1905. A. H. Barkley, Lexington.
84 *Infamy of Patent Medicines. D. H. Erkiletian, Laytonsville, Ky.
85 Diagnosis and Treatment of Gallstones. B. M. Ricketts, Cincinnati, Ohio.
86 Typhoid Fever. L. B. Cook, Stanford, Ky.

84. **The Infamy of Patent Medicines.**—Erkiletian states that there is an independent moral duty in the life of a physician which obliges him to uphold the honor and dignity of the profession, to enrich the resources of his knowledge, to be loyal to the laws of his conscience, his country and his God, and to

equip himself against prevailing evils. He considers the patent medicine evil a menace to our civilization. He declares that no reputable physician will ever prescribe a patent medicine or support its cause, and that there exists no evil which needs to be more seriously considered by the advocates of clean scientific medicine than this one of patent medicines. He calls attention to the fact that more harm has been done to the medical profession through the activities of the patent and proprietary medicine manufacturers than by any other means. Erkiletian criticises some widely advertised remedies and calls on every physician to aid in the fight against them. He advises educating the public in regard to patent medicines and appealing to the legislature for more stringent laws. He also advocates a higher standard of education for the physician, thus eliminating those who through ignorance of the action of drugs prescribe proprietary remedies.

New York State Journal of Medicine.

September.

87 A Glance at the Horoscope of Medicine. C. N. Palmer, Lockport.
88 Acetanilid Poisoning. E. B. Probasco, Glens Falls.
89 Typhoid Fever. S. J. Sornberger, Cortland.
90 Early Clinical Diagnosis of Cancer. B. W. Stearns, Binghamton.
91 Carcinoma of the Breast. E. C. Thompson, Newburgh.
92 Urine and Urinalysis. M. E. Dunning, Newburgh.
93 Catheterism of the Ureters. W. Ayres, New York.
94 Puerperal Sepsis. J. C. Taylor, New York.
95 Study of the Milk Supply in New York. S. W. S. Toms, Nyack.

International Journal of Surgery, New York.

September.

96 Treatment of Stenosis of the Cervix Uteri. E. Van de Warker, Syracuse, N. Y.
97 Subparietal Injuries of the Kidneys. W. Fuller, Chicago.
98 Salpingitis—Tuberculous and Otherwise. H. E. Pearse, Kansas City, Mo.
99 Gonorrhea in Women. A. S. Jaeger, Indianapolis, Ind.

New Orleans Medical and Surgical Journal.

September.

100 Yellow Fever Data. S. E. Chaillé, New Orleans.
101 Microbiologic Researches in Syphilis. H. Metchnikoff and E. Roux, Paris.
102 European Notes—Vienna. I. I. Lemann, New Orleans.
103 Success in Medicine. L. Lazaro, Washington, La.
104 Early Diagnosis of Carcinoma of the Stomach. S. K. Simon, New Orleans.
105 Comparative Frequency of Ulcer of the Stomach in the Caucasian and Negro Races as Determined Clinically. J. A. Storck, New Orleans.

Journal of Mental Pathology, New York.

September.

106 The Degenerate Ear. Anatomo-Anthropologic Sketch. V. V. Vorobieff, Moscow.
107 Electrocution: an Experimental Study with an Electric Current of Low Tension, Illustrated with Cardiographic and Respiratory Tracings. L. G. Robinovitch, Paris.

Archives of Physiological Therapy, Boston.

September.

108 X-Ray in the Diagnosis of Pulmonary Tuberculosis. G. E. Pfahler, Philadelphia.
109 Radium Photographs of the Stomach. M. Einhorn, New York.
110 Penetrating Power of the Static Current. A. Decker, Chicago.
111 New Film Carrier and Indicator for Dental Radiography, with Projection on a Horizontal Plane. S. Tousey, New York.
112 Differential Diagnosis Between Central and Peripheral Motor Lesions by Electricity. A. C. Geyser, New York.
113 Cure of Apparently Permanent Deafness by Vibratory Stimulation. A. K. Scholl, Philadelphia.
114 Roentgen Therapeutic Technic. W. L. Brosius, Gallatin, Mo.

Texas State Journal of Medicine, Fort Worth.

September.

115 Examination and Consultation in Personal Injury Cases. C. E. Cantrell, Greenville.
116 Testimony of Company Surgeons in Railway Damage Suits; Its Effect on the Jury. M. Smith, Sulphur Springs.
117 Invisible Railway Injury. C. T. Kennedy, Greenville.
118 Advances in Gynecology. J. W. Gilcreest, Gainesville.
119 Creeping Eruption. J. R. Shelmire, Dallas.
120 Tuberculosis in Texas. M. M. Smith, Austin.
121 Management and Treatment of Typhoid Fever. A. L. Hatchcock, Palestine.

Medical Standard, Chicago.

September.

122 Pruritus Ani. C. J. Drueck, Chicago.
123 Puerperal Infection as Seen by the Country Practitioner. H. F. Thomson, Buffalo Center, Iowa.
124 Three Cases of Cesarean Section with Hysterectomy. B. Robinson, Chicago.
125 Renal Diagnosis. L. E. Schmidt, Chicago.
126 Clinical Points in Chorea. J. H. Adams, Paoli, Pa.

American Journal of Surgery, New York.

September.

127 Advances in the Treatment of Muscular Palsies. B. Müller, Hamburg, Germany.
128 Surgery of the Stomach. H. Lilienthal, New York.
129 The Appendix and Its Relation to Pelvic Disease. C. W. Barrett, Chicago.
130 Paraffin in Surgery. (Continued.) W. H. Luckett and F. I. Horn, New York.
131 Aural Conditions of Special Interest to the General Practitioner. J. F. McKernon, New York.

Northwestern Lancet, Minneapolis, Minn.

September 1.

132 Family Physician as a Factor in the Tuberculosis Problem and His Obligations to His State. P. E. Jones, Salt Lake City, Utah.
133 Congenital Dislocation of the Hip. S. C. Baldwin, Salt Lake City.

Kansas City Medical Index-Lancet, Kansas City.

September.

134 Operation in the Patient's Home. H. Hill, Kansas City.
135 Pyorrhea Alveolaris and Some Comments. R. E. Darby, Springfield, Mo.
136 The Profession of Getting Hurt. J. Punton, Kansas City.
137 Use of Antitoxin in Other Diseases than Diphtheria. G. B. Dorrell, Republic, Mo.
138 The Right Heart in Pneumonia. O. L. McKillip, Kansas City.
139 Ancient Medical Prescriptions. R. L. Sutton, Kansas City.

Denver Medical Times.

September.

140 Normal Obstetrics, Management of the Puerperium. T. M. Burns, Denver.

Brooklyn Medical Journal.

September.

141 Teaching Methods in Gynecology and Obstetrics. C. Jewett, New York.
142 The Making of a Surgeon. G. R. Fowler, New York.
143 The Cure of Carcinoma of the Breast. L. S. Pilcher, Brooklyn.
144 Cancer of the Stomach: Problems of Early Diagnosis and Operative Treatment. R. W. Westbrook, Brooklyn, N. Y.
145 Surgery of the Gall Bladder. A. T. Bristow, Brooklyn.
146 Surgical Anatomy of the Gall Tract. W. F. Campbell, Brooklyn, N. Y.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 29.

1 *Surgical Treatment of the Non-malignant Diseases of the Stomach. B. G. A. Moynihan, R. Saundby, H. Hartmann, J. M. T. Finney, C. M. Mouilin, F. Eve, and others.
2 *Further Experiments on the Sterilization of the Hands and the Skin. C. L. Green.
3 Congenital Dislocation of the Hip Joint and Its Modern Treatment. J. J. Clarke.
4 *Sterilisation of the Hands. C. Y. Pearson.
5 Spontaneous Gangrenous Formations in the Vermiform Appendix. J. D. Malcolm.
6 Surgical Treatment of Chronic Gastric Ulcer and Gastric Dilatation by the Operation of Gastrojejunostomy and Jejunojejunostomy. T. G. Atkins.
7 Surgical Treatment of Malignant Disease of the Rectum. C. Ball, F. S. Edwards, H. Hartmann, E. S. Bishop, T. G. Atkins, S. White and others.
8 Unusual Condition of the Large Intestine Associated with Carcinoma in Two Sisters, Together with Carcinoma in a Third Sister. C. P. Childe.
9 Case of Gangrenous Appendicitis. T. G. Atkins.
10 Cystic Tumor of Omentum. L. A. Bidwell.
11 Acute Osteomyelitis and Periostitis of the Spine. A. H. Tubby.
12 *Two Cases of Operation Involving the Thoracic Duct. R. Bucknall.

1. **Non-malignant Disease of Stomach.**—Hartmann has performed 119 operations for non-malignant diseases of the stomach. Among these were 4 for perforated ulcers, 5 pyloroctomies, 1 excision of the lesser curvature, 2 gastroplications and gastropexies combined, 1 gastroplasty, 1 pyloroplasty, 1 duodenostomy, 1 gastrolysis, and 1 section of kink of the pylorus. The operation which Hartmann generally considers the best in the treatment of the non-malignant diseases of the stomach is gastroenterostomy, an operation which he has performed 102 times. These 102 cases are divided into three series. The first series embraced 21 cases, with a mortality of 23.7 per cent. The second series consisted of 34 cases, with a mortality of 8.8 per cent. In the third series there were 47 cases, with a mortality of 6.3 per cent. The operation resembles, in many respects, that of Mayo Robson and Moynihan. It is a posterior gastroenterostomy. Hartmann does not use clamps. The patient is placed in a slight degree of the Trendelenburg posture so that the contents of the stomach are in the cardiac part, and if the patient is well anesthetized nothing escapes when the stomach is opened. Hartmann leaves about 8 or 9 cm. between the duodeno-jejunal flexure and the anastomosis so that the gut descends in a straight line from the flexure to the posterior wall of the stomach. The sutures are made with silk. The inner one embraces all the coats. It closes the cavi-

ties and is hemostatic. The outer one includes the serous and muscular coats. A long fixation is made of the intestine, going obliquely downward and to the right. The stomach and bowel are opened at the level of the inferior right part of the apposed portion. Hartmann observed the vicious circle only once, in a case in which the stomach was not fixed satisfactorily at the opening in the mesocolon, which lead to an ascent of the intestinal loop through the opening. He found that in case of pyloric stenosis and in moderate hemorrhage recurring many times the patients are cured by gastroenterostomy. The remote results are also good in intractable ulcer not cured by medical treatment and in patients who suffer from hyperacidity. A tonic dilatation with gastroptosis is rarely an indication for surgical interference. In pyloric stenosis, the operative treatment is indicated as soon as the diagnosis is made. In chronic ulcer, surgical treatment is indicated only in the case of an ulcer with mechanical troubles and in those of an ulcer which gives the pyloric syndrome. In cases of excessive hematemesis, Hartmann operates only when there is distension or peristalic contraction of the stomach, and then he does only a gastroenterostomy.

2. **Sterilization of Hands and Skin.**—Green carried on a series of experiments to determine the relative value of aqueous and alcoholic solutions of sterilizing agents used for the purpose of sterilizing the skin of the patient. Experiments with aqueous solutions of all the antiseptics in common use, even those of the greatest strength that could be tolerated, proved that far from rendering the skin more sterile they had rather the opposite effect. Not only did the compress fail to destroy the micro-organisms situated on the skin, but it loosened the surface epithelium, rendering it easily detachable under the surgeon's manipulations. On the other hand, Green found a decided advantage in the prolongation of the action of the spirituous antiseptics. A greater proportion of the tests made proved sterile, and in no case was there any marked infection. He is convinced that alcoholic compresses readily and materially reduce the infectivity of the skin to a degree which at present is not possible to attain when treating the hands.

4. **Sterilization of Hands.**—Pearson describes his method as follows: For hands not already prepared for sterilization, a preparatory process has to be gone through, which consists of careful trimming of the nails, washing with ordinary soap and hot water, then, if the skin is at all rough, they are well rubbed with sterile sea sand so as to render the skin smooth and to remove redundant epithelium. This preparatory process is not necessary in the case of those whose hands are already in good cosmetic condition. The only form of nail cleaner employed is a piece of sterilized orange wood. The disinfection is divided into three stages: 1. Washing for five minutes with spirit of green soap and very hot water. The scrubbing is done under a tap of running water, and two sterile nail brushes are used in succession. 2. Dehydration by carefully rubbing the hands and forearms with pieces of gauze soaked in methylated spirit; this occupies three minutes. 3. Disinfection proper by rubbing for two minutes with gauze soaked in a 1 to 500 solution of mercuric biniodid in 70 per cent. alcohol. The biniodid is washed off with methylated spirit; the hands are then washed in normal saline solution. Out of the 18 cultural experiments made from normal hands treated as above, absolute sterility was obtained in 8, and practical sterility was obtained in all the experiments, the greatest number of colonies in any one experiment being 10. Out of the 12 experiments conducted on hands infected with highly resisting organisms, such as the spore-bearing hay bacillus, practical sterility was attained in 9, absolute sterility in 1; in 2 there was moderate infection. Pearson has met with only one person whose hands were irritated by this method.

12. **Operations Involving the Thoracic Duct.**—In the first case reported by Bucknall the thoracic duct was accidentally torn open during an operation for the removal of some tuberculous glands from the root of the neck in a man aged 54. The wound of the duct was not recognized at the time of operation, but twenty-four hours later there was a copious flow of lymph and chyle from the wound, and the patient lost strength and weight in a remarkable manner. Plugging having proved ineffectual, the torn ends of the duct were exposed and ligatured on the sixth day. No more fluid escaped, and with the reabsorption of chyle the patient rapidly recovered his strength and gained in weight. Two months later, however, he suddenly developed signs of widespread general tuberculosis, and rapidly died of this malady. In the second case the convexity of the thoracic duct in the root of the neck was caught up in some malignant glands in the posterior triangle, secondary to a cancer of the breast, which had previously been removed. The lumen of the part of the duct involved was entirely obliterated; it was, therefore, removed with the glands and its free ends were ligatured, without giving rise to any definite symptoms afterward.

The Lancet, London.

September 30.

13 Circulatory and Anatomic Abnormalities of an Acardiac Fetus of Rare Form. M. Campbell and H. D. Shepherd.
14 *Observations on Twenty-six Consecutive Cases of Gastro-enterostomy. A. R. Anderson.
15 Empyema in the Posterior Ethmoidal Labyrinth with Paralysis of the Conjugate Movements of the Eyes and Bi-temporal Limitation of the Visual Fields. W. Gregg and P. J. Hay.
16 Notification of Pulmonary Tuberculosis in Blackburn. A. Greenwood.
17 Complete Extirpation of the Penis for Epithelioma in a Hawaiian, aged 28 years; Recovery. E. H. Armitage.
18 Two Interesting Cases of Imbecility with Epilepsy. R. G. White.
19 Difficulties and Dangers of the Mastoid Operation, the Vicissitudes of Convalescence, and the Ultimate Result to the Patient. C. A. Ballance.
20 *Case of Mitral Incompetency and Ascites Treated with Apocynum Cannabinum. A. J. B. Duprey.
21 Influence of Nasal Obstruction on the Form of the Face. W. B. Parsons.
22 *Sanatoriums for the Poor and the Eradication of Consumption. R. C. Macfie.
23 *The Occurrence of a Spirillum in the Blood of Patients Suffering from Secondary Syphilis. G. M. O. Richards and L. Hunt.
24 Secondary Effects on the System which May Be Produced by Chronic Enlargement of the Tonsils. H. B. Gardner.
25 Essential Conditions of Steam Disinfection. W. Defries.

14. **Gastroenterostomy.**—Anderson reports on 26 consecutive cases of gastroenterostomy. The operation was performed for recent ulcer in one case, chronic ulcer in 11 cases, pyloric stenosis in 8 cases, and cancer in 6 cases. Three of the patients died, a mortality of 11.6 per cent. In one of these fatal cases the patient had a carcinomatous ulcer at the pylorus which involved the stomach wall and head of the pancreas. The patient lived eleven days after the operation. The second case was one of large chronic ulcer at the pylorus, with stenosis. The patient died from bronchopneumonia and cardiac failure. The third case was one of chronic ulcer on the anterior wall. The patient died on the eleventh day from chronic obstruction and debility. All the carcinoma cases terminated fatally. In the case of 5 of these patients temporary relief was afforded by the operation.

20. **Mitral Incompetency and Ascites Treated with Apocynum Cannabinum.**—The ascites in Duprey's patient developed so rapidly that the man had to be tapped once every four to six weeks. Finally he was placed on tincture of apocynum cannabinum, the dose being gradually increased from 1 to 10 minims, three times a day, with the result that from a very small quantity of concentrated urine, about half a pint, the daily excretion rose to several pints, and whereas tapping before using the drug was urgently needed every month or six weeks, the patient went along for six months without being tapped, and the probability is that if he had not stopped using the drug the fluid would not have reaccumulated.

22. **Sanatoriums for the Poor.**—Macfie discusses the question whether sanatoriums, as at present conducted, are the best offensive and defensive measures against consumption. He is of the opinion that sanatoriums under the present conditions involve a terrible waste of lives and money and, although with conjoint colonies and competent administration they might be made most useful weapons against consumption, yet they must not be permitted to divert philanthropic energy from more profitable and proven measures. Consumption will be most speedily and economically abolished, not by means of sanatoriums, but by hygienic improvements, better food, better housing, more open spaces, etc., and by direct measures

against the disease, along with notification, isolation, disinfection, and house-to-house visitation. An effort to make a few foul, infectious houses clean and airy and sunny will do more to eradicate consumption than can be wrought by many costly colossal sanatoriums.

23. **Spirillum in Blood of Syphilitics.**—Richards and Hunt examined films from every case of venereal sore seen by them and in some they succeeded in finding the organism described by Schaudinn and Hoffman. It appeared to occur in three forms, probably involution forms of the same organism, differing only in thickness, length and the number of spirals; one form being thick and straight or slightly curved, a second of the same thickness as the first but with spirals, and the third one exceedingly thin, distinctly spiral, with a large number of turns and very long. The first two varieties appeared to exist in the secretion and the superficial part of the sore, while the third variety only occurred in the deep scrapings, and in a film from such scrapings the organism could be seen lying among the blood cells. As the secondary stage of syphilis appears clinically to be a stage in which the infection is blood borne, and drawing an analogy from the rose spots of typhoid fever in which bacilli have been found, they took a case of secondary syphilis with a rash of a few days' duration, pricked a typical spot and made the blood films, taking the greatest care to avoid contamination by cleaning the skin with soap and then spirit and using specially clean slides. The films were then stained for five minutes by Giemsa's stain diluted 1 in 3 with distilled water, and on examination were found to contain a spirillum exactly like the fine form found in a sore. Other cases were taken and they have now observed the same organism in three patients. Films were taken from spots on the abdomen, chest and arm. The spirilla do not occur in large numbers and often require a long search and in some of the films only one has been seen. In one patient the organism was seen in a blood film taken on each of ten successive days and in the three cases in which the organism was found in the blood it had previously been seen in all forms in the primary lesion. Richards and Hunt consider the presence of the spirochete in the venereal sore as diagnostic of syphilis.

L'Obstétrique, Paris.

Last indexed XLIV, page 85.

26 (X, Nos. 1-2.) *Enlarging the Pelvis by Pubiotomy.—Elargissement du bassin par la pubiotomie. van Cauvenberghe.

27 *Nécessité d'une direction médicale dans l'allaitement au sein (in breast nursing). F. Quillier.

28 Des assurances sur décès d'enfants (premium on death of children). P. Budin.

29 "Infant Consultations."—Consultation de nourrissons à la mutualité maternelle de Vienne et de l'Isere. Vivien.

30 Sur l'inversion utérine. Ferré.

31 Quelques cas de grossesse gémellaires avec fetus antéposés (twin pregnancies). Lequeux.

32 (No. 3.) Deux observations de colibacillose au course de la puerpéralité. Roquel and Papin.

33 De la pasteurisation du lait (of milk). Perret.

34 *Les infections naso-pharyngées et leurs conséquences chez le nouvea-né (in the new-born). G. Laurens and L. Pierra.

35 (No. 4.) *Influence of "Infant Consultations" on the Affections and Mortality of Early Infancy.—Influence des consultations de nourrissons, etc. M. Mocquot.

36 *Résultats obtenus par les consultations de nourrissons ("infant consultations.") P. Budin.

37 *Des affections mammaires dans leur rapport avec l'allaitement maternel (in relation to breast nursing). G. Jeannin and Barierin.

38 No. 5.) Des hémorrhagies multiples chez le nouveau-né (in the newly born). C. Maygrier and Lemeland.

39 La version dans les cas l'insertion vicieuse du placenta. L. Demelin.

40 *L'eau de mer en injections isotoniques sous-cutanées (sea water). O. Macé and R. Quinton.

41 Les kystes de la face fetale du placenta. Planchu.

26. **Extramedian Symphyseotomy.**—Van Cauvenberghe has been conducting research at Leopold's clinic to determine the practicability of Gigli's method of enlarging the pelvis by sawing the pubic bone aside from the median line. He experimented on cadavers and gives seventeen tables showing the various diameters when the cut edges were separated to different distances. The bladder and the urethra retain their supports along the median line, and for this as well as for other reasons, the operation is far simpler and less serious than symphyseotomy. He saws the bone on the side where the head presents or will present after version, except in case of varices, a hernia or other obstacle on this side. When the cut edges are separated by 3 cm., the true conjugate diameter gains 1 cm., the transverse diameter gains 1.4, and the oblique diameters 1.3 cm. Separation to a distance of 4 cm. does not entail laceration of the capsule of the articulation, but this is liable to occur if the parts are separated to 6 cm., although in some of his experiences there was no laceration even when the distance between the cut edges was 8 cm. Laceration is not a very serious occurrence, but it is better to avoid it. In regard to the limits of the contracted pelvis Leopold has thus delivered a woman with a true conjugate diameter of only 7 cm., the child weighing 3,820 gm. The children are more apt to be small in case of primiparæ, and he has frequently had women spontaneously delivered with a true conjugate diameter of only about 7.5 cm. The limit for symphyseotomy is generally accepted as 7 cm., but van Cauvenberghe is convinced that this limit can be lowered for pubiotomy to 6.75 or even 6.5 cm.

27. **Necessity for Medical Supervision in Breast Nursing.**—Quillier quotes Budin to the effect that the raising of an infant is a science and a very delicate one. The most devoted and enlightened mother love can not supplant the necessity for this science, and only the trained physician is its exponent. The general notion that breast nursing does not require the same supervision as artificial feeding is an erroneous one. The breast may be given too often, too long, or the milk may be deficient in quantity or quality. Quillier gives a number of curves and tables to show the benefit derived from medical supervision of breastfed infants, avoiding disturbances and arresting incipient troubles, and aiding the child to develop into unusual health and strength.

34. **Nasopharyngeal Infections in Young Infants.**—The prognosis is always more or less grave, and every effort should be made to prevent infection of the nose and pharynx in the new born. Veillard advocates disinfection after birth of the nasopharyngeal cavities the same as of the eyes. Laurens admits the advisability of this, but—on account of the anatomy of the parts at this age—warns against the air douche or introduction of any fluid; dry gauze or cotton alone should be used. Another suggestion that has been made is not to allow children with coryza to remain lying down all the time. The Eustachian tube slopes so that mucopus is liable to find its way into the middle ear when the child lies on its back. If paracentesis is necessary, he rinses out the cavity with oxygenated water, first instilling a few drops of liquid vaselin. Certain patients may require more energetic surgical measures. If the trouble is due to the streptococcus alone, an antiserum might be used to advantage in the general treatment, but the infection is generally mixed. The conformation of the nasopharynx in the new born seems to invite infection and to render its treatment difficult. A rhinitis may lead to infectious processes in the eyes, digestive tract, lungs, sinuses or pharynx, or to epidemic cerebrospinal meningitis. Fluids introduced into the nose to rinse it out are liable to make their way into the middle ear or into the bronchi, and thus to carry infectious material to sound regions. For this reason the use of fluids has been entirely abandoned for the purpose by Budin and Brindeau. Intubation of the nose is also dangerous as it is liable to injure the mucosa. The nose can readily be cleared out by instilling some emollient, and when the obstruction has thus been removed, Laurens then instills four times a day four or five drops of neutral oxygenated water (12 volumes), diluted with boiled water to from one to five times its volume. The face should be kept clean of infectious material, especially around the eyes, and the child's head should be slightly raised so that the secretions will have less tendency to run into the pharynx and tubes. Another valuable adjuvant is the instillation into each nostril, five minutes before the child is given the breast or bottle, three or four drops of a 1 to 10,000 solution of adrenalin hydrochlorid. By inducing vasoconstriction in the mucosa this will temporarily restore the permeability of the nose. If this fails the child will have to be fed with a spoon.

35 and 36. **"Infant Consultations."**—THE JOURNAL has frequently referred to the out-department of the Paris maternities, in which the healthy children are brought back week after week for medical inspection and advice, a combination

of dispensary, baby show, mothers' club and lecture on hygiene. The influence of these "consultations" on the average growth and development of the children has surpassed all expectations. Budin here reports the results in his personal experience, and Mocquot in the "consultations" he has established in six country communities.

37. **Mammary Affections and Breast Nursing.**—Jeannin tabulates the cases observed at the Tarnier clinic in the last four years, and their effect on the mammary functions. The proportion of morbid processes in the breasts was about 10.2 per cent. of the 5,746 women who were able to nurse their children. The majority were observed in the spring. They coincided with uterine infection in from 10 to 22.6 per cent. of the cases in the various years. Breast nursing was apparently normal in 87.5 per cent. of the women who had had but a single attack of lymphangitis; in 57 per cent. of those with recurring lymphangitis; in 68.7 per cent. of those with galactophoritis, and in 40 per cent. of those with mammary abscess.

40. **Sea Water for Subcutaneous Injections in Debility.**—Macé and Quinton report that experiences with 40 weakly children have shown that subcutaneous injection of sea water has a decidedly favorable effect in raising the general tone.

Revue de Gynécologie, Paris.

Last indexed XLIV, page 188.

42 (IX, No. 2.) *Les petits kystes hemorrhagiques de l'ovaire. C. Daniel.

43 *Les péritonites à pneumocoques. C. Lenormant and P. Lecène.

44 *Des sténoses intestinales tardives consécutives à l'étranglement herniaire (strangulation in hernia). G. Cotte and R. Leriche.

45 Etude clinique et anatomo-pathologique sur les ulcères de l'estomac, et en particulier sur l'ulcère calleux (callous gastric ulcers). E. Ries (Chicago).

46 (No. 3.) *Le sarcome de l'utérus. Etiologie, anatomie path. du sarcome du corps. G. Piquand.

47 *Les kystes du mésentère dans l'enfance. A. Broca and C. Daniel.

48 *Sur la chirurgie du cardia. L. Sencert.

49 *Etude de la tuberculose rénale, et particulièrement de son traitement chirurgical. V. Pauchet (Amiens).

50 (No. 4.) *Le sarcome de l'utérus. Sarcomes du col (of cervix). G. Piquand.

51 *Un nouveau traitement des perforations typhiques de l'intestin. T. Domela (Tunis).

52 Hydrocolpos congénital. D. J. Cranwell.

53 *Traitement des invaginations intestinales chroniques. X. Delore (Lyons).

54 *Le rectum biharzien. M. Letulle.

42. **Small Hemorrhagic Cysts in Ovary.**—Daniel remarks that cysts of this kind occur more often than is generally supposed, and that they show no tendency to spontaneous retrogression. He gives the history in full of fifteen cases he has found in the literature, including Boldt's case of peritonitis from rupture of a hematoma of the ovary. Treatment can only be surgical.

43. **Pneumococcus Peritonitis.**—A case of circumscribed and another of diffuse peritonitis are described, both due to the action of the pneumococcus. The diffuse form was observed in 29 out of the 74 cases of pneumococcus peritonitis on record, and in 16 of these the peritonitis was secondary. The only treatment for the circumscribed variety is early extensive incision with ample drainage. This primary, isolated form is the most common, especially in children. The sudden, high temperature, palpation of an encysted effusion, and diarrhea are its main features. The primary diffuse form presents a syndrome exactly like that of appendicitic peritonitis. The only chance of recovery is by early operation, but the results are less promising than with the encysted variety. The secondary form is generally masked by the primary affection, and differentiation is difficult, but prompt surgical intervention offers the only chance for saving the patient. Some individuals have recovered after an operation in secondary encysted peritonitis, but no case is on record as yet of recovery after operation in the secondary diffuse form.

44. **Tardy Stenosis After Incarceration of Hernia.**—The only treatment is removal of the constricted portion, but greater attention should be paid to prophylaxis of such conditions. Cotte preaches the necessity for abstaining—on principle—from all attempts at taxis, except possibly at the very beginning of the incarceration. If the incarceration has lasted several hours no attempt should be made to reduce the hernia for fear of injury to the intestine with consequent tardy stenosis. If part of the intestine is to be resected, the gut should be removed to far beyond the strangulated portion. In 23 cases treated by surgical measures, the mortality was considerably less than after laparotomies for intestinal occlusion, and the patients rapidly recuperated.

46. **Sarcoma of the Body of the Uterus.**—Piquand's extensive monograph reviews the history of uterine sarcomata. He has collected 416 cases of sarcoma in the body of the uterus, and relates the details of 7 cases of circumscribed sarcoma of the uterine parenchyma personally observed, and of an eighth case showing giant cells, and a ninth exhibiting a sarcomatous polyp. Metastases, he states, are usually located in the lungs or peritoneum, the bladder having been involved in only one case, the intestine in 6 and the lymphatic ganglia in 7.

47. **Cysts in the Mesentery in Children.**—Broca could find only 22 cases in the literature, but has encountered 2 in his own experience. In one the cyst was included in a hernial sac; the patient was a boy of 4. The empty pocket was 15 cm. long, 8 cm. wide at the upper end and 4 cm. at the tip, enclosed in the inguinal hernia. The child recovered rapidly after the operation. Morton published the report of a somewhat similar case in 1896, but the patient was a young man. Broca's second patient was a girl of 6, healthy until four months previously, when violent colic and vomiting occurred and recurred at varying intervals. Symptoms of peritonitis finally developed, the presumptive diagnosis being tuberculous peritonitis with an encysted pocket, as a fluctuating tumor could be palpated in the right side below the umbilicus. There was no fever, but the pulse was 130, the eyes were sunken and bilious vomiting was frequent. The laparotomy revealed a large multilocular cyst in the mesentery, with smaller cysts around it. The large cyst was removed, but the child succumbed the next day. Two small cysts were found on the other side of the mesentery, extending into and through the muscle and mucosa of the intestine. The mucosa was very thin in one of the cysts and had perforated in the other, and this had been the unrecognized cause of the terminal peritoneal septicemia.

48. **Surgery of the Cardia.**—Sencert's illustrated anatomic and experimental study of the surgery of the cardia concludes with a recommendation of esophago-gastrostomy for stricture in this region. He has successfully resected the cardia in living dogs and worked out the technic on the cadaver, as he describes in detail.

49. **Tuberculosis of Kidneys.**—Pauchet publishes the details of a case of primary hematogenic tuberculosis of the kidney cured by nephrectomy eight years ago. He discusses the diagnosis. Nine times out of ten the bacillus arriving by way of the blood infects the cortical zone of one kidney alone. This infection causes hematuria and cystalgia during the first stage, which is essentially chronic, but curable by removal of the focus. The diagnosis should be made before the syndrome is completed by pyuria, bacilluria, pains and enlargement of the kidney. The patient first applies for relief from the cystalgia, as a rule. Urination is painful, and desire to urinate abnormally frequent. No tumor nor ulceration can be seen with the cystoscope, but the mouth of one ureter is congested and swollen. The hematuria is spontaneous, not following fatigue or walking, and may come on at night. It lasts for several days, stopping as abruptly as it began, and is seldom so severe as to affect the general health. The hematuria may or may not be accompanied by ureter colic. The blood is mixed thoroughly with the urine, or it may appear in the form of worm-like clots, from 10 to 15 cm. long. Painless, profuse, spontaneous, hematuria, with the features of renal hematuria, occurring in a young patient should always suggest primary tuberculosis of the kidney. At a later stage the lower end of the kidney will be found abnormally low or enlarged. Tuberculosis of one kidney does not affect the general health in the early phases. When the kidney has been exposed an exploratory incision will decide whether the trouble is due to calculi, cancer or tuberculosis. The entire organ should be removed in case of the latter, resisting the temptation to do a partial nephrectomy. The microscope will reveal tuberculous follicles in the apparently sound parts.

50. Sarcoma of the Cervix.—Piquand summarizes 29 cases of hydatidiform sarcoma of the cervix from Weber's, published in 1867, to Williamson's, published last March. He has further collected 41 cases of other varieties of sarcomata of the cervix, and devotes considerable space to a discussion of the histogenesis of sarcomata of the uterus in general. (See 46 above.)

51. Treatment of Typhoid Perforation.—Domela insists on the fact that the deaths which have occurred after suture of a typhoid perforation have always been the result of another perforation above or below. The sutured perforation has always been found well healed. The danger of these successive perforations should emphasize the necessity for more radical measures than merely suturing the perforation found at the laparotomy. He proposes that the entire diseased portion of the intestine should be excluded from the balance of the digestive tract, and be allowed to recuperate in peace. He suggests total, unilateral exclusion by an anastomosis between a loop of the intestine above and another below the usual site of the typhoid ulcerations. When the abdomen is opened to suture the perforation, the operation would not be rendered much more serious by an ileocolostomy, while the grave prognosis of typhoid perforation amply justifies any measure that brightens the outlook. If perforations occur afterward in the excluded portion of the gut, there is every reason to believe that they would be comparatively harmless in the empty, resting bowel, and would heal spontaneously in time. He concludes with a discussion of the technic.

53. Treatment of Chronic Invagination.—Delore reports 3 cases of chronic invagination treated by operative measures. In the first case he resected the whole invaginated portion and the patient succumbed to the effects of this too radical procedure. In the other cases he resected merely the inner part, drawing it out through an incision in the outer part of the sheath. Both of these patients promptly recovered. The lesser gravity of the latter technic commends it; the results are the same as from total resection. It is described in the text-books as the Maunsell or König method. In 2 of Delore's cases the invagination had been caused by a small tumor which was found in the tip of the invaginated resected part.

54. Bilharzia Rectum.—Letulle observes that "of all the chronic ulcerating affections of the intestine, bilharziosis is most liable to be erroneously diagnosed; and yet its differentiation is extremely easy and as certain as it is elegant." The rectum presents a cylindrical induration of its walls, with numerous ulcerations and adenomata scattered over the non-ulcerated portions. The ulcerations never extend beyond the muscularis mucosæ, while all the elements of the mucosa display a tendency to hypertrophy. The chronic inflammation is generally restricted to the pelvic portion of the large intestine. The resulting rectitis causes so much pain and cachexia that surgical intervention should be considered.

Archiv f. Gynäkologie, Berlin.
Last indexed page 892.

55 (LXXVI, No. 1.) *Untersuchungen über Anomalien der Plazentar-Struktur hypoplastischer Uteri und deren Folgen. O. Schaeffer.
56 Ueber Cysten-Bildung an der menschlichen Plazenta. E. Runge.
57 Pregnancy in Accessory Cornu. Beitrag zur Kenntnis der Nebenhornschwangerschaft. R. Werth.
58 Beitrag zur Lehre von der Struma ovarii colloides. J. Eversmann.
59 Ueber Retractions-Ring und inneren Muttermund (internal os). G. Martin.
60 Beobachtungen und Erfahrungen über Myome der Gebärmutter (uterus). Engelmann.
61 *Ueber die sog."Conglutinatio orificii uteri externi." H. von Bardeleben.
62 Ueber Autolyse der Plazenta. G. L. Basso.
63 Zur Histologie der desmoiden Vulvartumoren, mit Berücksichtigung ihrer Abstammung vom Ligamentum rotundum. G. W. Maly.

55. Placentation in Hypoplastic Uteri.—The conditions in a hypoplastic uterus are not favorable for normal placentation. After expulsion of the fetus there is liable to be retention of parts of the membranes, entailing amenorrhea for months and absence of the mammary secretion and involution of the uterus. Treatment should be the cautious curettement of the upper necrotic layer of the mucosa. This cures amenorrhea from this cause. Intrauterine treatment should also be instituted to promote hyperemia afterward, such as tamponing with iodoform gauze for several days. Curettement is contraindicated in all other cases of hypoplasia of the uterus, puerperal or postpuerperal, as the mucosa is liable to become regenerated and transformed, improving conditions for subsequent pregnancies. The histologic findings in 5 cases are shown in colored plates.

61. Prevention of Dilatation of External Os.—Bardeleben describes 5 cases of what is generally known as conglutination of the external orifice of the uterus. He prefers the term "prevention of dilatation of external os uteri." The cause may be stenosis and rigidity in elderly primiparæ, or it may be due to cicatricial strictures or adherence of the lower pole of the ovum or to overfilling of the amnion, each presenting different indications for treatment.

Beiträge zur klin. Chirurgie, Tübingen.
Last indexed XLIV, page 1232.

64 (XLV, No. 1.) *Examination of Trachea in Case of Goiter.—Untersuchungen der Luftröhre und die Verwendung der Tracheoskopie bei Struma. O. Wild (Zurich).
65 *Zur Pathologie der bakteriellen Peritonitis. A. Peiser.
66 *Ueber subkutane Darmverletzung und ihre Behandlung (injuries of intestine). S. Lilienfeld.
67 *Experimentelle Untersuchungen über Radium-Wirkung. C. Blauel.
68 Hypernephroma renis. P. Kuzmik.
69 Untersuchungen über die Progenitur Thyreopriver. O. Lanz (Amsterdam).
70 (No. 2.) *Symmetrical Swelling of Lachrymal and Salivary Glands in Relation to Pseudo-Leukemia.—Die sym. Schwellung der Thränen- und Speicheldrüsen in ihren Beziehungen zur Pseudoleukämie. M. v. Brunn.
71 *Total Tearing Off of the Face.—Totale Abreissung der Gesichtsmaske. H. Kaposi.
72 *Pseudospastische Parese. Id.
73 Ueber die Naht des Nervus hypoglossus (suture). A. Wolfler.
74 *Ueber Dauer-Resultate der Colopexie bei hochgradigem Rectum-Prolaps. F. Pachnio.
75 *Zur Trepanation bei Meningitis. G. Hirschel (Heidelberg).
76 Coxa vara im Gefolge von Ostitis fibrosa. M. v. Brunn.
77 Ueber die Luxatio pedis sub talo. Trendel.
78 Sponge Holder in Twelve Compartments for Steam Sterilization.—Ein mehrtheiliger Tupferbehalter für den Dampfsterilisator. C. Blauel (Tübingen).
79 Ueber Harnblasengeschwülste (bladder tumors). Riegner.
80 *Behandlung und Dauer-Ergebnisse bei Verletzungen und Verengerungen der männlichen Harnröhre (injuries and strictures of male urethra). G. Schmidt (Breslau).
81 Zur Kenntnis des primären Magen-Sarkoms (of stomach). Oberst.

64. Tracheoscopy in Case of Goiter.—Wild has had opportunity to examine the trachea through the tracheoscope in 1,000 cases of goiter and describes the various findings. His article of 110 pages is illustrated.

65. Defenses Against Bacterial Peritonitis.—The conclusions of Peiser's clinical observation and experimental research are to the effect that after the peritoneum has become infected its power of absorption becomes temporarily diminished. This, he thinks, is evidently a defensive reaction on the part of the organism against threatening septicemia and general intoxication from absorption of the bacteria and their toxins in the peritoneum. The essential struggle against the bacteria takes place in the peritoneum, and the latter must conquer in the struggle or the general organism is doomed. The idea that absorption by the peritoneum is one of the means of defense against bacterial peritonitis and that delayed absorption favors it is erroneous, he thinks, and exactly the reverse he believes is true. He also found that injection of adrenalin into the abdominal cavity retarded absorption by the peritoneum. Exner has recently made the same discovery in regard to absorption of poisons in the stomach. He discovered that an intraperitoneal injection of adrenalin retarded the absorption of ingested poisons. Peiser adds that encapsulation, adhesions and fibrin deposits are only further efforts on the part of the organism to prevent absorption by the peritoneum in case of bacterial invasion. He is convinced that his experimental findings apply also to man to a certain extent.

66. Contusions of Intestine.—Lillienfeld has operated in 4 cases of laceration of the intestine from abdominal contusions in the last three years. One of the patients recovered after laparotomy with extensive drainage and rinsing of the intestine and suction drainage through the hole as large as a penny found in the cecum. The diffuse suppurative peritonitis rapidly subsided and convalescence was disturbed only by

an infarct in the lung which caused transient trouble. The fistula into the cecum was closed in less than a month. The favorable outcome in this case was the more surprising, as thirty hours had elapsed after the injury from the sharp edge of a board, flung by some machinery, before the patient was received at the clinic. The feces that had escaped from the opening in the cecum were solid, and did not make their way into every nook and corner like the thinner contents of the jejunum when the small intestine is injured. No attempt was made to suture the perforation and it was retained for an artificial anus. This provided the best possible conditions for the paralyzed intestine and for the subsidence of the peritonitis, as has been frequently observed in diffuse suppurative peritonitis treated by making a large opening into the intestine with aspiration drainage if necessary and possibly also lavage of the stomach to relieve the alimentary canal further. In the case described no attempt was made to rinse out the abdominal cavity; it was merely sponged out with compresses wet with salt solution, the peritoneal exudate being swabbed up with dry sponges. This mechanical cleansing was done as cautiously as possible, supplemented by copious subcutaneous infusion of salt solution. In a fifth case the intestinal wall was merely crushed and no signs of perforation could be discovered, although there were evidences of diffuse suppurative peritonitis. The general condition was poor and no attempt was made to resect the crushed intestinal wall, as at first intended. The loop involved—the lower loop of the ileum—was wrapped in gauze and an opening made into the cecum to relieve the intestine. The copious peritoneal exudate was sponged away and the abdominal cavity drained with gauze, not rinsed. The injured loop apparently fully recuperated as the symptoms gradually subsided, and the patient was dismissed in good health in less than two months.

67. **Experimental Research on Action of Radium.**—Blauel remarks that the action of the radium rays is not felt below 1 cm. from the surface. Primary injury of the vessels was never observed in any of his numerous tests, but the radium rays have an injurious influence on all the tissues. The cells which are physiologically less resistant are the first to succumb. In normal tissues these susceptible cells are the more highly differentiated ones, especially the epithelial cells, and in tumors, the tumor cells. The epithelium of rabbits' kidneys exposed was the first to display evidences of injury, and in human carcinoma and sarcoma only the specific tumor cells. These findings corroborate Werner's suggestion that the action of radium is an intoxication with the products of the destruction of lecithin, as the epithelial and tumor cells are peculiarly rich in lecithin.

70. **Symmetrical Swelling of the Lachrymal Glands in Leukemia.**—The symmetrical swelling of the lachrymal and salivary glands, which Mikulicz first described in 1892, has many points in common with pseudoleukemia and leukemia. The patients presenting these symmetrical swellings have been followed and the connection with pseudoleukemia has been established by the further history of the cases. They ran into pseudoleukemia or leukemia of the severest type, and are probably only different degrees of the same affection, or at least have a common origin with pseudoleukemia. The causal agent is probably some hematogenic infection.

71. **Total Loss of the Face.**—A woman of 54 was standing on a ladder leaning against a lamp-post. The ladder was not on the hook placed to hold it, and it fell. As the woman fell with it, her chin caught on the hook and it tore out her entire lower jaw and all the soft parts above to just below the orbits. The face was left hanging like a mask on the hook, and was sent to the clinic the next day by mail. The case is illustrated and the successful results of the plastic operations which restored the woman's looks. She was fed at first through a stomach tube, but later learned to use a nursing bottle, and can now eat semi-solid food. Her speech at first was absolutely unintelligible, but she can now make herself understood. The surgeons restored most of the cheeks and proposed to make a new chin with an artificial lower jaw, but she refused any operation beyond what was absolutely necessary, and now wears a false face of vulcanized rubber, which is held in place by spectacles and a rubber band around the neck.

72. **Pseudo-spastic Paresis.**—Kaposi describes a case similar in some respects to those published under the heading "pseudo-spastic paresis with incessant tremor, subsequent to trauma." The patient, a young man, previously healthy, was hit on the head by the broken, flying head of a heavy hammer. The convulsions and tremor were noticed immediately as the patient fell after being struck. Kaposi discusses the nature and classification of the case.

74. **Remote Results of Colopexy in Case of Large Rectal Prolapse.**—Pachnio reports the recent examination of 11 cases of rectal prolapse treated by colopexy at Garré's clinic. The prolapse recurred in 6 of the cases. The cases in which no relapse has occurred show the benefit of the colopexy when the patients can refrain from heavy work thereafter or do not have to pass through the stress of childbirth. Under other circumstances colopexy alone is liable not to be radical enough to insure a permanent cure. The remote results are known in only 22 out of the 58 cases in the literature, but a relapse was observed in 13 of these.

75. **Trephining in Meningitis.**—Hirschel states that two cases of suppurative meningitis have been treated by trephining at Czerny's clinic in the last seven years. In one case the meningitis was consecutive to empyema of the frontal sinus, in the other to a contusion over the right eye in a patient with erysipelas of the face. The assumption of a localized process justified the intervention in each case, but in both it failed to arrest the fatal course of the affection. Transient improvement was observed; in one case the hemiplegia subsided, but the thrombosis and softening persisted and entailed a fatal termination.

80. **Injuries and Strictures of Urethra.**—Schmidt here reviews a year's material at Mikulicz' clinic—a total of 140 cases of injury or stricture of the male urethra, with the remote results after treatment. This experience shows that an organic stricture is a very serious affection, as is evidenced by the high mortality and the recurrences. Improvement and cure are obtained only by long and tedious treatment in which the patient must co-operate with great perseverance. Measures to prevent development of a stricture are of the utmost importance on this account. Bougie treatment should be commenced at the slightest sign of stricture formation, and be kept up as long as necessary, with systematic, periodical examination afterward. Gonorrhea is the chief cause for these strictures. Injury from without frequently entails stricture formation, but such a stricture has better prospects of a cure from operative measures, especially from resection and suture of the urethra. Non-operative stretching is also liable to prove successful, but whether so permanent is still a question. Abrupt, violent bougie treatment should be avoided. If cautious use of the bougie does not answer the purpose, and if energetic measures are necessary, then the bladder should be punctured, with continuous drainage, or the perineum should be incised. The patient should then be referred to a specialist for further treatment. The desire to get along without a cutting operation should not be allowed to interfere with intervention in time, before local and general damage results.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

82 (XXXI, No. 36, Sept. 7.) *Pavy's Test for Sugar.—Ueber die Verwendbarkeit der Pavyschen Zuckertitrationsmethode für die Klinik und den praktischen Arzt, und über einige technische Modifikationen derselben. Sahli.

83 *Zwei Fälle von primärem Larynx-Erysipel. L. Blum.

84 *Zur Frage der Untersuchung der pleuritischen Exsudate auf Tuberkel-Bacillen. E. v. Zebrowski.

85 *Zur Chemie der Krebsgeschwülste (cancer). P. Bergell and T. Dörpinghaus.

86 Spirochæte pallida und refringens nebeneinander im Blute bei hereditärer Lues. G. Nigris.

87 Spring-Box for Cotton Dressings.—Sterilisierbare Wattebüchse für das Sprechzimmer. E. H. Oppenheimer.

82. **Pavy's Quantitative Test for Sugar in Urine.**—Sahli regards Pavy's titration with ammoniacal copper solution as a very simple, rapid and reliable method. He discusses the various points to bear in mind and its application in the clinic and for the general practitioner, proposing several modifications to simplify the technic. He also preaches the necessity for the practitioner to make his own sugar tests, not trusting them to a third party. Only the physician himself is able to

appreciate the shades of difference in the reactions and to control them. Trusting to others for such an important element in the diagnosis is liable to avenge itself. He has recently known of an instance in which a physician treated a patient for months on the diagnosis of diabetes based on the finding of sugar by a third person. The diabetic diet had reduced the patient to an emaciated condition when it was finally discovered that there had been a mistake in regard to the discovery of sugar in the urine. The quantitative tests should also be made by the physician if he is to apply therapeutic measures understandingly.

83. Primary Erysipelas of the Larynx.—The diagnosis in the two cases described was difficult, but it was finally confirmed by the spreading of the erysipelas to the face. A subacute laryngitis, lasting for several weeks, had preceded it in one case, and in the other it followed the crisis in a croupous pneumonia. The clinical picture was the same as described in the text-books, except that in the second case there were no signs of stenosis.

84. Determination of Tubercle Bacilli in Pleuritic Effusions.—Jousset's "inoscopy" has been described in these columns. It is based on the fact that the solid particles in blood, etc., do not become precipitated, but remain in suspension until they are included in the coagulum. By digesting out the fibrin in the clot, the tubercle bacilli can be detected in the residue. Zebrowski has been testing this method of detecting tubercle bacilli and suggests a modification of it which he thinks is more reliable and much easier. It is just the reverse of the Jousset technic. He aims to prevent coagulation in the fluid and accomplishes this by adding a 0.5 per cent. solution of sodium fluorid to an equal amount of the aspirated effusion. The mixture is set aside in a cool room until the next day, when the sediment is centrifuged, and slides made according to Ziehl's technic. He has thus examined the effusion in 34 cases of pleuritis and in 2 of peritonitis. In 83 per cent. of the cases of secondary pleurisy he found tubercle bacilli and in 55 per cent. of the primary cases.

85. Chemistry of Cancer.—Bergell has been investigating the aminoacids in cancer tissues by Fischer's ester method as a means of determining the character of their albuminous content. He found that the albumin in the cancers examined contained an unusually large proportion of the four amino acids, and also of diamino acid, with a remarkably small proportion of leucin in comparison to other animal tissues.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed page 683.

88 (LXI, No. 6.) *Die diagnostische Tuberkulin Reaktion im Kindesalter (In children). B. Schick.
89 Zur Charakterkritik der akuten, nicht pustulösen Exantheme und ihre Nachformen. D. Galatti.
90 Morphologische und biologische Untersuchungen über die Darm bakterien des Säuglings (of infant intestine). E. Moro.
91 Proportion of Fat in Human Milk.—Ueber den Fettgehalt der Frauenmilch. P. Reyher. Id. W. Freund. (First part in No. 4.)
92 (LXII, No. 1.) Untersuchungen der Leipziger Marktmilch, mit besonderer Berücksichtigung der in derselben nachweisbaren Streptokokken (in market milk). H. Brüning.
93 Raw Milk in Infant Feeding.—Ueber rohe Milch als Säuglingsnahrung. M. Hohlfeld.
94 Congenital Cardiac Defects and their Coincidence with Other Deformities.—Zur Lehre von den kongenitalen Herzfehlern und ihrer Koinzidenz mith anderen Missbildung (Allenie). O. Krausse. Two cases.
95 Measles After or During Scarlet Fever.—Masernerkrankungen nach Scharlach. H. Rissl.
96 Ueber Angina ulcero-membranosa Plauti und Stomatitis ulcerosa (identity of). Z. W. Eichmeyer.
97 *Rhythmic Jerking of the Head in Sleep.—Ueber nächtliche Kopfbewegungen bei Kindern (Jactatio capitis nocturna). J. Zappert.
98 Fall von kongenitalem Leber-Sarkom und Nebennieren-Sarkom mit Metastasen (sarcoma in liver and suprarenals). A. W. Bruck.
99 (No. 2.) Bladder Tumors in Children.—Zur Lehre von den Harnblasengeschwülsten im Kindesalter. G. Hüsler. 2 cases.
100 Zur Kenntnis der Hysterie im Kindesalter (In children). O. Meyer.
101 "Mongolian Birth Marks" in European Children.—Sogen. Mongolen Geburtsflecken der Kreuzhaut bei europ. Kindern. K. Fusijawa.
102 2 Fälle von Pachymeningitis hemorrhagica interna. P. Misch.

88. Tuberculin Test in Children.—Schick writes from Escherich's clinic at Vienna to urge the more general adoption of the tuberculin test in dubious cases of tuberculosis in children. It was applied in 120 cases in the clinic, the age of the children ranging from three months to 14 years. The special features of the response to the test in children are the frequency of an intense reaction at the point of injection and the length of the general reaction. This sensitiveness to small doses is the more pronounced the shorter the interval since infection.

97. Rhythmic Jerking of the Head in Sleep.—This habit was observed for several years in the seven children whose cases are described. When the child lay on its back the head was moved to and fro, but when it lay on its side the head was lifted from the pillow each time. The sleep was tranquil, and other signs of a nervous affection or hysteria could not be found in some of the children. The habit continued from the third year into late childhood. In one instance three of the children in a single family had this habit. One child exhibited it also during its waking hours. It seemed to be pleasurable rather than otherwise to the children affected.

Hospitalstidende, Copenhagen.

Last indexed page 865.

103 (XLVIII, Nos. 23-26.) *Early Operative Treatment of Appendicitis.—Den tidlige operative Behandling af den akute Blindtarmsbetaendelse. Tage-Hansen.
104 *From My Service as Volunteer in the Havana Mosquito Brigade.—Fra min Tjeneste, etc. K. Pontoppidan.
105 *Tidlig bakteriologisk Diagnose af Lunge-Tuberkulose (early diagnosis). C. A. Blume.
106 *Om Fund af Spirochæte pallida (Schaudinn). V. Jensen.

103. Appendicitis.—Tage-Hansen believes in early operation in appendicitis. He found pus in 23 out of 25 patients operated on last year, and the pus was putrid in all but 2 cases. Fecal concretions were found in the appendix in 10 instances. The operation was undertaken in 3 cases after one day, in 7 after two days, in 5 after four days, and in others from the fifth to the fourteenth day after the onset of symptoms. Since he has made it a rule to operate at once, except in the mildest cases, he has not lost a patient in his last series of 30 cases.

104. Volunteer Service in the Havana Mosquito Brigade.—Pontoppidan pays a high tribute to the work of the Americans in demonstrating the rôle of the mosquito in tropical pathology, and describes the details of his volunteer service in the mosquito brigade at Havana during the American occupation.

105. Early Diagnosis of Pulmonary Tuberculosis.—Blume was unable to obtain sputa for examination in several cases in which tuberculosis was suspected. He finally succeeded in obtaining material by scraping the larynx with a cotton wound probe, and was able to detect tubercle bacilli in the mucus thus obtained from the throat.

106. Spirochetes in Syphilis.—Jansen reports confirmatory findings of spirochetes in syphilis and their absence in control cases.

Books Received

DEPARTMENT OF THE INTERIOR BUREAU OF GOVERNMENT LABORATORIES. I. The Polypodiaceæ of the Philippine Islands. II. New Species of Edible Philippine Fungi. By E. B. Copeland, Ph.D. Paper. Pp. 146, with illustrations. Manila: Bureau of Public Printing, 1905.

DEPARTMENT OF THE INTERIOR BUREAU OF GOVERNMENT LABORATORIES, CHEMICAL LABORATORY. I. Autocatalytic Decomposition of Silver Oxide. II. Hydration in Solution. By G. N. Lewis, Ph.D. Paper. Pp. 97. Manila: Bureau of Public Printing, 1905.

DEPARTMENT OF COMMERCE AND LABOR BUREAU OF STATISTICS. No. 2. Series 1905-06. Monthly Summary of Commerce and Finance of the United States, August, 1905. Paper. Pp. 859. Washington: Government Printing Office, 1905.

PRINCIPLES OF BACTERIOLOGY. A Practical Manual for Students and Physicians. By A. C. Cabot, M.D., Seventh Edition, 100 Illustrations, some in colors. Cloth. Pp. 689. Price, $2.75. Philadelphia: Lea Brothers & Co., 1905.

THE BARTON FIRST-AID TEXT-BOOK. Manual for the Student in First Aid. By H. H. Hartung, M.D., Illustrated by R. G. Wells. Cloth. Pp. 82. Boston: New England First Aid Association.

REPORT OF THE SURGEON GENERAL OF THE ARMY TO THE SECRETARY OF WAR for the Fiscal Year Ending June 30, 1905. Paper. Pp. 208. Washington: Government Printing Office, 1905.

A TREATISE ON THE NERVOUS DISEASES OF CHILDREN. For Physicians and Students. By B. Sachs, M.D. Second Edition. Cloth. Pp. 571. Price, $4.00. New York: Wm. Wood & Co.

FIRST AID IN ACCIDENTS. By C. R. Dickson, M.D. A Manual of Instruction. Cloth. Pp. 127. Price, 50c. Boston: National First Aid Association of America.